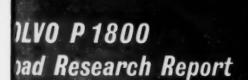
CAR and DRIVER

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ments you can read. You may find the ashtray a bit small. (As the racing editor of "Motor Life" notes, in a rave test report.) But in every other detail, we think you'll agree that Sunbeam Alpine is the biggest sports car value ever. At only \$2595*, it's in such demand that you might have to wait for yours. For just a little while. See your Rootes dealer or write Rootes Motors, Inc., 505 Park Avenue, N. Y. C.

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In the never-never land portrayed on magazine covers the handsome couple sliding into Volvo's beautiful P 1800 on this month's C/D just have to be embarking on a fast, adventure-filled journey.



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If you look at the firing tip of this spark plug, you'll see it's longer than usual. Longer to reach deeper into the exploding

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Doug Diffenderfer took 1960 SCCA Class F Production Championship, placing 1st or 2nd every race, in 1952 Siata 208S.



Doug works on car himself—says: "With a little Oilzum in her joints, this old girl is a frisky performer!"

OILZUM helps Doug Diffenderfer win championship in 8-year-old car



Doug Diffenderfer escaped without a single "dnf" ("did not finish") in 1960 — gives much of the credit to Oilzum Motor and Gear Oils.

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OBSERVATION AND OPINION

FASTEN YOUR SAFETY BELT! — That's the rallying cry of a generation of Americans that's moving incredibly faster than its forebears. It's the catch-phrase of a tomorrow that's here today, a reminder that our high-speed existence is threatened by the sudden stop.

It's surprising how rapidly we become accustomed to safety belts and, indeed, how we come to expect them. After a recent orgy of cross-country jet flying I relaxed in the seat of an airport bus and reached down for the safety belt, which of course wasn't there but which seemed the most natural thing to expect. A pundit recently dismissed the trend toward bucket seats in our industry as a fad as fleeting as wire wheels or tinted plastic tops; this will certainly be true if makers don't take full advantage of buckets to make them as adjustable and

comfortable as they can be but have generally failed to be so far. Anyway, general adoption of the bucket concept will greatly ease the installation and use of safety belts, and will lend a lot of the "aircraft image" that leads you to expect and to employ the belts.

These thoughts were also inspired by this month's Road Research Report on the new Volvo P 1800, which at the present time is one of the few cars in the world that has belts as standard equipment. The belts fitted are Volvo's own exclusive design, a type that combines a lap strap with a diagonal shoulder strap, both connected to a single steel latch at the center of the car. An extensive adjustment process is necessary to fit the belt to the individual driver, but the protection finally achieved is very complete. The Volvo method

also offers a handy way to

hang the straps when not in use and is designed to avoid metal latches which contact the body.

I've used these belts in the Volvo sedans, on which they're optional in this country, and have found them extremely handy and surprisingly unobtrusive in use. The accompanying photo shows how the sedan door pillar allows high mounting of the diagonal belt, which promotes a smooth flow of the strap across the chest (yes, indeed!) down to the central latch. On the P 1800 the pillar isn't used in this way. The diagonal is mounted much lower, making it tend to slide down off the shoulder unless it's tightened to the point of discomfort. It's a fine concept, but we feel it wasn't successfully translated to the P 1800.

On this subject I'm glad to see that belt attachments will be standard on all 1962 American cars and that firms like England's BMC are also standardizing the fittings. Though CAR AND DRIVER definitely feels that emphasis should still be placed on preventing the accident, rather than on cleaning up afterward, belts are an elementary and incontrovertible aid to injury reduction. The controversy for and against belts that still exists in the racing world has no bearing on the highway situation. The fact that Stirling Moss prefers to be thrown clear of his fragile Grand Prix Lotus doesn't detract from the safety you gain by being belted inside your sturdy MGA.

Sports car clubs have done a lot in the past to further courtesy on the road and preach the gospel of safety through skillful driving. Perhaps this is the time to emphasize safety in the public eye by introducing a resolution in your club requiring all members to install—and use—safety belts. Many clubs have already done this; we hope yours will too. It's a big step in the right direction.

-Karl Ludvigsen

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LETTERS

THREE CHEERS FOR THREE RED ROSES

Just finished "Three Red Roses in the Rain" (May, 1961). Great!

What a relief to get away for a moment from the often-dull detail of wishbones, lifters and downdrafts and to strike so effectively at the basic reasons that we're CAR AND DRIVER subscribers in the first

Nolan has captured perfectly the almost pathetically ephemeral beauty of the annual race.

> Willem Lange III Keene Valley, New York

54-40 FANS SEEK RECOGNITION

Our last stagecoach line was discontinued some time ago. The Pacific Northwest is now safe for travel. Our vehicular mobility is no longer limited to stagecoach and covered wagon. During the ensuing years our region has produced approximately 40 organized sports car clubs and two (we feel) of the finest race courses in the United States and Canada that are specifically designed for road racing.

Olivier Gendebien, during a visit to the Westwood Race Course near Vancouver, British Columbia, said that it is one of the finest race courses in the world. A course comparable to Westwood, Pacific Raceways near Kent, Washington, has been completed and saw competition in the last

The aforementioned courses along with our regular airport course at Shelton, Washington, one of the longest (4.5 miles) and fastest (90 mph average); the hillclimb at Maryhill, Washington (which is unique among hillclimbs) and the airport course at Arlington, Washington constitute the greatest variety of road racing that can be found within a road distance of 200 miles

Pete Lovely, who placed third at Sebring; Pat Piggott, with his Lotus Formula Jr., who was 1st in the amateur race at Laguna Seca; Ray Rairdon, who finished 4th in SCCA National standing in B production in a Corvette and Dave Tatom with a Porsche Carrera, who placed 1st in class at Laguna Seca are but a few of the drivers from the Northwest who have competed successfully outside our region.

We would appreciate a little coverage in your magazine of our Pacific Northwest events as there is no apparent national recognition of our endeavors.

Written for and by members of the fol-

N.W. Jaguar Drivers Club, SCCA Northwest Region, Cascade Sports Car Club (Burien, Wn.), N.W. Sprites. M.G. Car Club (N.W. Centre), Puget Sound Sports Car Club.

Marlene Kay Sohol Seattle, Washington

LATEST FROM STROMBECKER

As midwest representatives for Dowst (Strombecker Manufacturing Company Division), we were extremely interested in OCee Ritch's article "Living Room Lime Rock" (May, 1961).

The basic set now consists of 6 straight track and 8 curved sections (12 inches long -7 inches wide) forming a figure 8 layout 70 inches x 28 inches. Overpass supports are provided. A 1/30 scale D-Jaguar and Testa Rossa Ferrari, completely assembled. are included in the set. The drivers, windshields, and decals come unassembled in the set and may be attached to the cars. The basic set is complete with a twin circuit 6-volt 12-ampere power pack. The cars are now powered with our new X-600 motor, designed for the speed and durability needed for model road racing. This set retails for \$29.95.

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As Mr. Ritch suggested, we have an accessory track which may be added to the basic set to form a 4-lane track. We also now have a chicane strip (or obstacle strip as we call it) for added thrills, as an accessory. The track now has aluminum stripping rather than brass, for better conductivity. Other cars in the 1/30 scale are the Maserati (250F) and believe it or not, a Go Kart.

The set, cars and accessories, are designed for the road racing fan. The cars reach speeds of 102 scale mph on the basic figure-8 layout. We also have set up scale tracks and in the majority of the cases we can better the standing track speed records. We have maintained the fine detail and styling in our cars, on which Mr. Ritch complimented us. The Testa Rossa is a beauty to behold.

To emphasize a point made by Mr. Ritch, this is a challenge - a test of skill - each car has its own handling features; no two cars can be driven alike. Too much speed on the curves and you'll either spin out or flip the fence. You have to have a button in your hand to appreciate the thrills of Strombecker Road Racing. Our set is Road Racing - not a highway set!

Should your readers wish further information on our set or wish to suggest changes or additions for our set, please feel free to contact us - we would be happy to hear from them.

Bill Walter **Dowst Manufacturing Company** 600 N. Pulaski Road Chicago, Illinois

We regret these changes in the Strombecker line were made after our story was put together. They certainly sound like worthwhile additions.

OUR OBSERVANT READERS

Congratulations on a very exceptional May issue. One small detail I just can't allow to pass, however, is found in the wonderful drawing of the Weaver 1500 by Gordon Bruce. I believe you will agree that the right tie rod should pass below the diagonal frame tube, not over it as pictured.

> Dean L. Adams Culver City, California

You are absolutely right; that's one of the problems of drawing a car that doesn't exist yet!



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8/CAR AND DRIVER/SEPTEMBER 1961

PIPELINE

What makes European racing so popular? What is it that gives it an inherent quality? The answer, simply, is money - lots of it. Money, pseudo-ethical rumblings aside, attracts factory participation, the best professional drivers and thousands of fans who gladly pay admissions convinced they will see top-quality racing. They are rarely disappointed.

An attempt to change the complexion of racing in this country is under way. We endorse the efforts whole-heartedly, but want to make it plain we feel there is ample room for "peaceful coexistence" between a pro racing card and amateur events such as

those put on by the SCCA.

The plan is this: three newspapers, the LOS ANGELES TIMES, the SAN FRANCISCO Ex-AMINER and the DENVER POST, are sponsoring three professional races in the hope of developing a major American road racing schedule. Firm dates for the three races have been set and prize money in excess of \$70,000 will be offered. It's hoped the impetus will be given to adding another three events so there will be six in 1962.

The announcement was made jointly by Glenn Davis, the Times's special events director, Jerry Diamond, the Examiner's sports car editor and Sid Langsam, Continental Divide Raceways director. Initial race meetings will be held October 1 at Continental Divide, October 15 at Riverside and Octo-

ber 22 at Laguna Seca.

The Los Angeles Times-Mirror will back the \$20,000 Riverside race, the Examiner has posted \$20,000 for the Laguna Seca event and the Post is providing \$10,000 for Continental Divide. In addition, lap money and parts and accessory prizes will boost the tally. Finally, and very important to the success of the venture, the three newspapers will pool their resources to provide a liberal fund for shipping, appearance and expense money to insure the greatest invitational field in U. S. road racing history.

Officials at Watkins Glen have reportedly expressed an interest in joining the series and those at the new Indianapolis Raceway Park have indicated their track may be considered. In addition, there is discussion about a proposed race in the Mexico City, Mexico area as a wind-up for the U.S. "championship trail," coming just before the annual Nassau meeting. Other tracks regarded as strong possibilities for joining the series include Meadowdale and Bridge-

We're hoping the events this fall will be a wild success and urge C/D readers in the Los Angeles, San Francisco and Denver areas to support them to the hilt. The chances are you will see some really exciting racing as well as personally help to launch a nationwide series of high-caliber events. The dates, again, are: Continental Divide, October 1; Riverside, October 15 and Laguna Seca, October 22.

(Continued on page 10)



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KENDALL REFINING COMPANY . BRADFORD, PENNA.

10/CAR AND DRIVER/SEPTEMBER 1961

(Continued from page 8)

Lotus is planning a stepped-up production of its cars to meet anticipated sales totaling \$3 million this year. A \$500,000 order for Elites, Sevens and Formula Juniors has been placed by Western Distributors, Inc. of Hollywood, California.

The Lux Clock Manufacturing Co., Inc., Dept. C/D, Waterbury, Connecticut is offering a sweep-second hand clock suitable for dashboard mounting. With a maximum diameter of 31/2 inches, it features a gray polypropylene case and a bracket adjustable through 270 degrees. The movement has a jeweled balance stud and screw. The 24-hour dial features numbers one through twelve in luminous paint while 13 to 24 are silver as are the second numbers. The sweep hand is red and the background is black. The clock has a depth of 23/4 inches and is priced at \$12.95 plus federal tax.

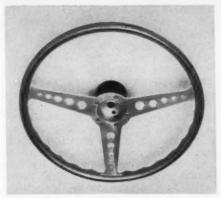


We recently paid a call on Bob Janssen, who runs Racing Safety Equipment, Inc., Dept. C/D, Box 314, Bellerose 26, L. I., New York. Bob's place is a veritable storehouse of racing goodies of all kinds, especially for the fast-growing sport of karting. As we examined the fine design and construction of his Italian-made Trackster RS racing suit, Bob gently reminded us that the price of both one- and two-piece versions is now the same: \$16.95. We erred a buck low in the June Pipeline. Bob also reported that a brand-new helmet is on its way from Bell. Called the Kompact, it's apparently based on the Shorty but its simpler harness will allow it to sell for only \$24.95. Like all Bells, though, it's Snell-approved, so it's likely to be a bargain for sports car pilots as well as the karters for whom it's designed.

A really compact folding scooter that will fit into the jump seat of a TR3 is available from Import Car Registry, Dept. C/D, 608 South Dearborn Street, Chicago 5, Illinois. Called the Valmobile, it's priced at \$265. Top speed with the 50 cc engine is said to be 34 mph — not bad for 3 bhp. It weighs 92 pounds and is made by the Gosho Company, Japan.

The Columbia Motor Corporation, Dept. C/D, 419 E. 110th Street, New York, New York, is offering catalogs of bearings, mufflers and shock absorbers for most imported cars. They're available for dealers only.

Forged aluminum connecting rods claimed to offer reduction of reciprocating weight, less vibration and stresses are available for hot overhead valve engines from Auto Dynamic Balancing, Dept. C/D, 5136 Heintz Street, Baldwin Park, California.



Enthusiasts have shown a lot of interest in wood-rimmed steering wheels for their cars. Motor Sports, Dept. C/D, Room 330, 353 West 57th Street, New York 19, New York has them for just about any car. Here's a listing of cars, wheel part numbers and prices: Austin-Healey Sprite, AHS-15, \$40.95; Austin-Healey 100-6 and 3000, AG-16, \$59.50; BMC 850, BMC-15, \$40.95; Ford Anglia, FA-15, \$43.50; Jaguar 3.8 Mk. II, JMK-16, \$79.50; Lotus 7, L-15, \$40.95; MGA, MGA-16, \$49.50; Renault Dauphine Caravelle, RDC-15, \$48.50; Triumph TR2/TR3, TR-16, \$49.50; Triumph Herald (15-inch) TRH-15, \$40.95; Triumph Herald (16-inch) TRH-16, \$41.95. The wheel pictured is the one for the Sprite. Made in England, the Laurie wheel is bleached mahogany.



The Canell Model SP luggage rack, shown here on an MGA, is made of polished aluminum. Readily removable, the mounting pads remain fixed to the trunk lid with four cap screws covering the sockets when the rack is off. Priced at \$19.95, it is available from the Canell Company, Box C/D 23, Hackensack, New Jersey. Development of an aluminum ski rack to fit the luggage rack's sockets is expected to be ready this fall. No price has been announced for the ski rack.

You may recall we carried a story several months ago on tentative plans for a new car to be built by the Seagrave Corporation, well known for its fire fighting apparatus. Checking recently to see how things were going, we were informed by Arnold Saltzman, president of Seagrave, that all plans for the compact have been dropped indefinitely. It appears the corporation is expanding in directions other than the automotive field.

The Corvette Club of Western Pennsylvania sent Astronaut Commander Alan B. Shepard a trophy for "Fastest Time of Day." It was inscribed May 5, 1961, the day Shepard, a Corvette driver, became the first American in space.

—HW

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Since some cars lift the inside front wheel off the ground on fairly fast corners, and even those which do not, load that wheel very lightly, a skillful driver can gain time by aiming his inside front wheel across the grass verge at the apex (not usually more than a foot) and thus increase the effective width of the road by up to a foot. Even low curbs can be treated in the same fashion, as long as the balance of the car is not disturbed. Overdo the practice and you lose more than you gain.

P.S.: In approaching a slow corner, you can often save time by slowing the car sufficiently with the brakes to shift directly from fourth gear to second (or fifth to third in a 5 speed car). Obviously, you have eliminated one time consuming shift and put the strain of slowing the car where it belongs—on the brake, not the gearbox.



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DETROIT NEWSLETTER

by Roger Huntington

There is growing evidence that the current medium compacts (Olds F-85, Buick Special, Ford Comet, etc.) will depend heavily on the sports-luxury marketing theme to fight off the challenge of the coming Ford and Chevrolet "senior compacts". These new compacts will be strictly bread-and-butter utility cars, and there will apparently be no early attempt to push performance and luxury options. Since they will fall in just about the same price slot as the F-85s, Specials and Comets, these latter manufacturers see special options as a good way to get a jump ahead and expand their market appeal.

CONVERTIBLE COMPACTS TO BOW

The new sports coupes like the F-85 Cutlass, Special Skylark, Tempest Le Mans, Comet S-22 are only the beginning. These lines will be further dolled up for '62. Twodoor convertible bodies should be available in all makes by next spring, and a flock of new optional performance equipment is in the works. Buick and Olds are said to be experimenting with the aluminum-case Borg-Warner four-speed transmission for the Specials and F-85s. Pontiac is fooling with a Corvair-based four-speed for the Tempest. Optional heavy-duty suspension and brakes are slated for most GM compacts. The '62 F-85 is rumored to be offering a beautiful exhaust-driven turbo-supercharger installation that will boost the horsepower of the 215-cubic inch V8 to somewhere between 230 and 250. Buick may adopt this later for the Special Skylark. Ford seems to be concentrating on engine power, as the integral intake manifold is a serious breathing restriction on the Falcon-Comet Six. This may all be changed for '62. We hear that the new 223-cubic inch cast iron V8 being readied for the Ford senior compact may be offered as a Falcon-Comet power option. Chrysler hasn't announced a sports-luxury version of the Lancer-Valiant compact, but this is likely to come before the '62 model introductions. They are also said to be working on improved power options for the 170 and 225cubic inch six-cylinder engines.

CHRYSLER'S TURBINE

I had a ride the other day in Chrysler's new gas turbine experimental car that was described by Editor Ludvigsen in the June issue. I'd like to add a couple of comments.

The acceleration from a standing start—
if you don't wind the engine up with your
foot on the brake—is quite sluggish, just
about adequate for traffic and that's all. But
acceleration increases as you build up speed,
so that pickup in the higher speed ranges

is about normal for a 140-bhp engine in a car of this weight. Since engine torque falls off in a straight line with increasing speed there is no sense of a rising, surging torque curve as with a hot piston engine; it's an interesting sensation. The lack of vibration is uncanny. It actually emphasizes road rumble and minor bumps, so the suspension engineers will be hard pressed to keep up. But I can assure you that when a good gas turbine engine is put in a chassis that is designed for it from the ground up, you're going to get the most fantastic ride you ever had. And Chrysler's new variablepitch vanes for the output turbine have opened entirely new horizons in fuel economy. I watched the turbine temperature gauge, and it rode between 1200 and 1300° F. at all constant road speeds from below 30 mph to over 80. Temperature means efficiency in a gas turbine. Fuel mileage is comparable with a good piston engine of equal horsepower!

And to get some idea of the potential of even higher turbine temperatures, I asked project engineer George Hucbner what would happen to the power and turbine temperature if the fuel flow were increased to the point where all the oxygen was being "burned" in the air passing through the engine (which would be at an air-fuel ratio between 15 and 16-to-1). He said this 140-bhp engine would show somewhere between 850 and 1000 horsepower—and the turbine gas temperature would go up to nearly 4000 degrees! Apparently we have some work left to do on the gas turbine engine!

175 BHP CORVAIR

Speaking of high-output engines, rumors continue to circulate that Chevrolet is experimenting with special free-breathing cylinder heads for the Corvair engine, using larger valves and ports. Word is that the maximum horsepower achieved with re-worked production heads has been 117 at 5500-6000 rpm. This isn't outstanding performance from 145 cubic inches these days - and one look at the stock ports and valves will pinpoint the reason. Well-designed rocker-arm heads should yield up to 175 bhp at 6500-7000 rpm in a practical streethighway setup. This is assuming adequate cooling, which has been a problem up to now in the Chev dyno rooms when working with modified Corvair engines.

Just which way Chevrolet will jump or whether they'll jump at all - is debatable. All official word poo-poos any plans to "hot-rod" the Corvair. But the entirely unexpected success of the Monza sportsluxury series must certainly have triggered some serious thinking about performance. Bill Thomas, well-known speed equipment manufacturer in Pasadena, California, has developed some modified Corvair heads that are said to give outstanding power. Several months ago he placed small ads in the sports car magazines for blueprints and parts to make the conversion - and was so swamped with inquiries that he still is not straightened out. Chevrolet engineers have studied these prints, but it is not known whether they tried the conversion on the dyno. More likely any move by Chev would be an entirely new design. Apparently the big question is whether the potential market justifies the tooling cost. I think it would. We'll keep you posted. -RH



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14/CAR AND DRIVER/SEPTEMBER 1961

EUROPEAN NEWSLETTER

THE TWO MGs

Two new MGs, one of them the first under-1000 cc Midget since the "P" series passed into limbo in the mid-1930s, have been announced by the British Motor Corporation. The cars come fast on the heels of the new Sprites and three-carb Healey 3000 described in the July and August issues.

The fact that the new Midget is simply an Austin-Healey Sprite in light disguise may disappoint those who had hoped BMC would celebrate the revival of an historic type-name with a feast of mechanical novelty. If you're old enough, or well-read enough, or both, to get a lump in your throat at the recollection of MG's past glories in sub-liter racing and record-breaking, you'll likely be drawn to the Midget rather than the Sprite on purely sentimental grounds.

THE MG MIDGET

The Midget's affinity to the Sprite II is so close that the story can be told very briefly in terms of what differences there are. The MG has its own range of body colors (only white is common to both lines), a distinctive grille, plus, of course, the inmortal octagon badge, chromium

strips along the body flanks and the hood, better seat trim and a padded roll at the top of the dashboard. A tachometer is standard equipment and the floor covering is different and better. A deluxe model of the Sprite, which had not been announced when C/D carried the first description and Road Test on the car in July, is now available and this one's specifications are uniform with the Midget's in practically every way.

As close as the Sprite/Midget relationship is, the two cars, unlike BMC's 850 Austin and Morris sisters, don't share the same factory symbol. ADO41 identifies the Healey, ADO47 the MG.

90 BHP MGA MK II

The Mark II version of the popular MGA features 10.5 additional horsepower and slightly modified styling. The source of the extra horses is an increase in the cylinder bore from 2.968 inches to an even 3.0. The capacity is thus raised from 1588 to 1622 cc, or 98.4 cubic inches. Pistons, connecting rods and the crankshaft are beefed up to take additional surge and on the higher of two optional compression ratios, 8.3 and 8.9 to one, output becomes 90 bhp at 5500 rpm, compared to 79.5 at 5600 for the former 1588 cc engine. The rating on the lower compression ratio is 84.6 bhp at 5650 rpm. Overall gearing goes from 4.3 to 4.1 to one with indirects of 5.632 (third), 9.079 (second) and 14.901.

External recognition points on the MGA 1600 Mk. II are a new grille design, with the slats approximately vertical instead of following the general contour of the grille surround, and a rearranged rear lamp cluster. The latter is moved inboard a few inches from the fender and is horizontal rather than vertical. On the roadsters the dashboard is now covered with a leather-cloth in the style of the former coupes.—DM





Left above and below are cockpit and countenance of new MG Midget. New MGA grille is above.



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TECHNOTES

MGA-FALCON

Some of your readers might be interested in my installation of a Ford Falcon engine and transmission in my 1956 MGA. I am more than pleased with the results and would recommend the change to others who might be interested. I now have much better accessibility to the engine, better torque, same economy and use American parts.



The installation is 90 pounds lighter than originally and the slightly reduced weight on the front wheels does not detract from the MG driveability. There was, of course, considerable work involved and a few minor problems had to be solved. Except for its greater length, the size and configuration of the Falcon set-up inside is even better than the original installation. It was necessary to:

1. Cut a well in the firewall for additional length; a Porsche engine mount was welded on the cut out cross member to preserve frame rigidity.

2. Remove the old and weld on new, simple engine mounts.

3. Widen the tunnel approximately one inch on each side because of the more rearward position of the bell housing.

4. Cut a "V" section from the transverse transmission mounting member, relocate the MG mounts to hold the Falcon transmission.

5. Splice a Falcon front universal to the MG drive shaft.

6. Relocate the heater.

7. Put a cover plate on the oil filter mount.

I used the MG generator and leads merely by welding a pair of tabs on the Falcon generator mount to raise the position about one inch for better frame clearance. I put a cover plate on the fuel vacuum pump drive hole and used the electric fuel pump. The exhaust pipe was cut and rewelded to cross underneath from right to left.

The low-oil-pressure switch was replaced with a stock pipe fitting for the MG gauge

line. A similar fitting was used for the MG temperature bulb. I mounted the MG clutch actuator cylinder on the bell housing by means of a bracket. Put a variable resistor on the lead to the 6 volt coil to reduce voltage from 12 volts.

All in all, it has been a very interesting project. I intend to get some 3.5 or 3.7 differential gears or an entire Falcon rear end to replace the original 4.3 ratio. I anticipate better performance and mileage even better than the present 24 mpg when complete.

I should be happy to furnish more details to anyone interested. I have read and enjoyed your magazine for many years and always look forward to my new copy.

A. P. Wilson 607 Kirkwood Place La Jolla, California MG-

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LOOSE SPOKES THE CULPRIT

Regarding the letter from Richard Hollern in the May issue, concerning a tendency for his Austin-Healey to "dive from side to side," I had the same trouble with my '59 100-6. It turned out to be a couple of broken spokes on the right side rear wheel. I had been concentrating on the front end trying to cure the fault, but after changing the wheel with broken spokes the car was back to normal.

B. W. Sargent Toronto, Ontario, Canada

A CASE HISTORY

I read with interest the letter of H. T. Heimbuch with regard to the trouble he is having with his engine running-on after the ignition is cut. I experienced the same problem with my Austin-Healey 100-6 and cured it quite simply.

The car began running-on after about 3000 miles, toward the latter part of the break-in period. The engine was decarbonized and the valves lapped in at about 4000 miles in accordance with the suggestion in the owner's manual. At the same time I had the combustion chambers highly polished, but this didn't seem to help. The engine is otherwise stock.

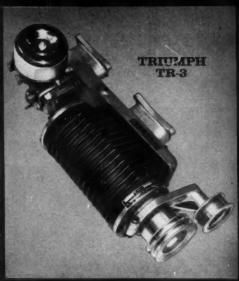
I drive about 70 miles per day and find the running-on occurs only after a hard fast run. I found that switching to a higher octane gas (Golden Esso, in my case) cured the problem. Occasionally I use a tankful of Shell Premium or Gulf Crest, but find that using anything else brings a return of the "running fits." I tried using a 50-50 blend of Golden and regular one time but the running-on persisted so I decided to stick with the super premium. Mixing is a damn nuisance anyway.

I can't say I get better mileage with the super premium but performance is definitely improved with it, I average about 20 miles per gallon cruising at 65-70 mph on trips. In fact I've averaged this from the time the car was new and this includes all my driving. I tried holding it to 50 or less for a week to see if there was any gain in mpg, but it was still the same old 20 miles per gallon.

H. C. Canaday Denmark, South Carolina

A letter recommending a similar cure was also received from Bren H. Starcher, of Medford, Oregon, who said higher premium fuel stopped running-on in his TR3.





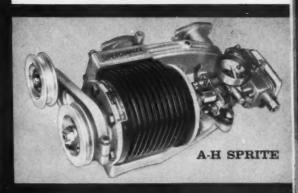
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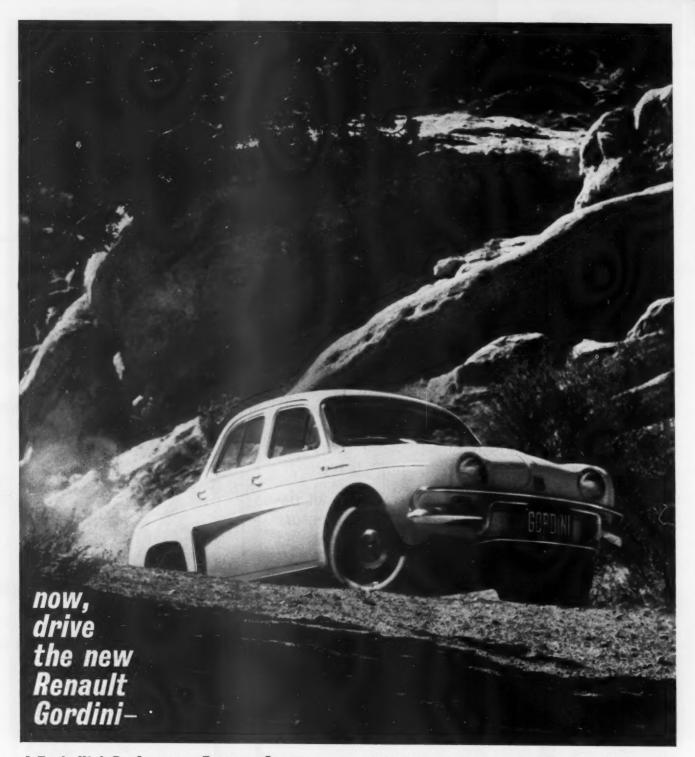
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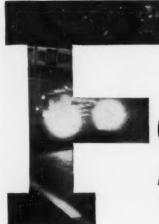


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*(except routine maintenance and tires)

RENAULT

Tour de Corse, November 1959—1st, 2nd, & 3rd in Class (cars up to 1,000 cc) / Rallye Neige et Glace-Grenoble, January 1959—1st in Class (cars up to 1,000 cc), French cars only / Ivory Coast Rallye-Abidjan, February 1959—1st & 2nd (stock cars, any cc) / Mille Miglia Brescia, May 1959—1st, 2nd, & 3rd in Class (cars up to 1,000 cc) / Senegal Rallye Dakar, June 1960—1st & 2nd Overall / French Mobil Economy Rum, July 1960—1st in Class, 49.21 m.p.g. (cars 700 to 1,000 cc) / Tour de Corse, November 1960—1st in Class (cars up to 1,150 cc).



errari Picnic at Le Mans

by Jan Norbye
The brothers Rodriguez tried
all they knew but it wasn't
enough to top the canny team
of Hill and Gendebien.

• After the sensational April tests on the circuit, where the rear-engined V6 2.4-liter Ferrari went 'round in 3:54.6, equaling 128.33 mph, with the front-engined 3-liter V12

car of Phil Hill only 0.6 second slower, Ferrari domination was not unexpected. The official SEFAC entry consisted of two V12s for Hill/Gendebien and Mairesse/Parkes, a rear-engined V6 for Ginther/von Trips, and a new Berlinetta for Tavano/Baghetti. The Rodriguez brothers were driving their familiar 3-liter

entered by Luigi Chinetti's North Amer-

ican Racing Team.

The main opposition consisted of three V12 Type 63 Maseratis, two entered by Briggs Cunningham and one by the Scuderia Serenissima. The Cunningham cars were entrusted to Hansgen/McLaren



Dan Gurney, very disappointed.

and Pabst/Thompson, while the Italian entry was to be driven by Vaccarella/Scarfiotti. Other contestants for an outright victory were the Aston Martins of John Ogier's Essex Racing Stable and the Border Reivers, the former being a 1959 car with a new

cylinder head, with Salvadori/Maggs at the wheel, and the latter a car of similar vintage but without subsequent factory

modifications, to be driven by Jim Clark and Ron Flockhart.

One striking feature of this year's race was the number of drivers currently engaged in Grand Prix racing that were taking part. Apart from those mentioned above, Stirling Moss drove a G.T. Ferrari as did Trintignant, while Masten Gregory shared a Porsche with Holbert; Bonnier and Gurney were on the same team, with Barth and Herrmann completing the German entry. Porsche specifications were conservative. The engines were Carrera-type, with low compression ratios and Weber carburetors. All Porsches were drum-braked. Two were coupes with 1.7-liter engines as first seen during the April tests, and one was an open car with a two-



Olivier Gendebien, exhausted.

liter engine for Gregory/Holbert. Obviously, their aim was to finish first in their class, with no thought of an outright victory or even a win on index of performance or energy. Class victories were also aimed at by Standard-Triumph, entering a team of 2-liter Triumphs, and the Rootes Group, presenting two Sunbeam Alpines.

Practice times, when viewed in relation to the test results of two months previously, were disappointing. Wednesday evening saw Richie Ginther drive the rear-engined Ferrari 'round in 4:2.8, followed by Walt Hansgen in 4:3.8 in the V12 Maserati. Mairesse was over two seconds faster than Ricardo Rodriguez, lapping in 4:7.0 while Gendebien contented himself with a careful 4:11.2. On Thursday night western France was haunted by heavy rains, and nobody tried to equal the previous night's times. Fastest was Hansgen with a lap in 4:19.5.

Race day dawned cloudy but dry. At 12 noon tribute was paid to the victims of the accident in 1955, as J.-M. Lelievre and Jacques Loste placed a wreath on the palisades in front of the memorial plaque. By three p.m. all tanks and oil filler caps had been filled and sealed, and during the remaining hour before the start the engines were being warmed up.

With 5 minutes to go there was complete silence, with the drivers lined up for the start in their respective circles opposite their cars. Paul Panhard, head of one of the oldest car factories in France (and the only one still engaged in racing, as represented by the D.B. Panhards) raised the starter's flag, and at 4 p.m. gave the signal to go.

24 Hours of Le Mans June 10/11, 1961 8.36 miles per lap

115.83 114.85 110.16 108.13 107.50 107.37 106.38 105.55 99.88 99.88

		miles	
Gendebien/Phil Hill	Ferrari TRI	2779.9	
Mairesse/Parkes	Ferrari TRI	2756.4	
Noblet/Guichet	Ferrari G.T.	2644.2	
Pabst/Thompson	Maserati	2596.9	
Gregory/Holbert	Porsche	2579.9	
Grossman/Pilette	Ferrari G.T.	2577.3	
Barth/Herrmann	Porsche	2553.7	
Cunningham/Kimberly	Maserati	2528.8	
Ballisat/Bolton	Triumph	2373.9	
Linge/Ron	Porsche G.T.	2373.5	
Leston/Slotemaker	Triumph	2330.7	
Allen/Tayor	Lotus	2233.6	
Kosellek/Massenez	Lotus	2229.5	
Hulme/Hyslop	Abarth	2193.3	
Becquart/Rothschild	Triumph	2145.5	
Harper/Proctor	Sunbeam	2067.9	
Magne/Alexandrovitch	A.C. Bristol	2031.5	
Laureau/Bouharde	D.B. Panhard	1950.5	
Moynet/Vidilles	D.B. Panhard	1826.9	
Guilhaudin/Jaeger	D.B. Panhard	1826.8	
Rollen/Bartholoni	D.B. Panhard	1793.6	
Caillaud/Mougin	D.B. Panhard	1777	
	Mairesse/Parkes Noblet/Guichet Pabst/Thompson Gregory/Holbert Grossman/Pilette Barth/Herrmann Cunningham/Kimberly Ballisat/Bolton Linge/Ron Leston/Slotemaker Allen/Tayor Kosellek/Massenez Hulme/Hyslop Becquart/Rothschild Harper/Proctor Magne/Alexandrovitch Laureau/Bouharde Moynet/Vidilles Guilhaudin/Jaeger Rollen/Bartholoni	Mairesse/Parkes Ferrari TRI Noblet/Guichet Ferrari G.T. Pabst/Thompson Maserati Gregory/Holbert Porsche Grossman/Pilette Ferrari G.T. Barth/Herrmann Porsche Cunningham/Kimberly Maserati Ballisat/Bolton Triumph Linge/Ron Porsche G.T. Leston/Slotemaker Triumph Allen/Tayor Lotus Kosellek/Massenez Lotus Hulme/Hyslop Abarth Becquart/Rothschild Triumph Harper/Proctor Sunbeam Magne/Alexandrovitch A.C. Bristol Laureau/Bouharde D.B. Panhard Guilhaudin/Jager D.B. Panhard Rollen/Bartholoni D.B. Panhard	Gendebien/Phil Hill Ferrari TRI 2779.9 Mairesse/Parkes Ferrari TRI 2756.4 Noblet/Guichet Ferrari G.T. 2644.2 Pabst/Thompson Maserati 2596.9 Gregory/Holbert Porsche 2579.9 Grossman/Pilette Ferrari G.T. 2577.3 Barth/Herrmann Porsche 2553.7 Cunningham/Kimberly Maserati 2528.8 Ballisat/Bolton Triumph 2373.9 Linge/Bon Porsche G.T. 2373.5 Leston/Slotemaker Triumph 2330.7 Allen/Tayor Lotus 2223.6 Kosellek/Massenez Lotus 2229.5 Hulme/Hyslop Abarth 2193.3 Becquart/Rothschild Triumph 2145.5 Harper/Proctor Sunbeam 2067.9 Magne/Alexandrovitch A.C. Bristol 2031.5 Laureau/Bouharde D.B. Panhard 1950.5 Moynet/Vidilles D.B. Panhard 1826.8 Guilhaudin/Jaeger D.B. Panhard <t< td=""></t<>

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The Ferrari attack was not a complete model of efficiency. A dejected von Trips salutes Rodriguez while leaning on his gasless factory car.



Holbert vaults into open Porsche that he co-drove to fifth place with Masten Gregory. Team cars ran Carrera-like engines to insure class win.

Fourth-place Pabst/Thompson Maser had more power than the winning car but was unable to use it due to poor handling. Urge came from big V 12.





American Porsche driver Bob Holbert sleeps the sleep of the just at 2:30 a.m. after helping place his silver car up among the first ten machines.



Driver Olivier Gendebien does a little pre-race public relations work with the men who bolt them together. It must have helped for he and Phil Hill won with this same front-engined Ferrari.

The initial acceleration of the Aston Martin pilots was fully worthy of the acceleration of the Aston Martin DBR1/300, and when the cars went under the Dunlop bridge, Jim Clark was in front of Roy Salvadori, with a pack of sports and G.T. Ferraris snarling behind. Down the Mulsanne straight they went, and Richie Ginther shot ahead with the rear-engined Ferrari, with Gendebien close behind, then the two Aston Martins, and in a sensational fifth place, Stirling Moss on the G.T. Ferrari. When they reached the Maison Blanche, Stirling Moss had even passed Roy Salvadori, while Jim Clark clung to third place.

Pedro Rodriguez was working his way up the field, and came into the leader group after two laps, with Gendebien in front and Richie Ginther second. Among the Porsches, Holbert was in front of the coupes in the open 2-liter RS.

After 4 laps Walt Hansgen was third in the Cunningham Maserati V12, driving harder than the Ferrari pilots, but was soon passed by the Rodriguez Ferrari. The other Maserati V12 cars were well back, as were the Porsche factory cars and the Aston Martins.

The lap record was not broken during the race, contrary to expectations. Pedro Rodriguez made the fastest lap on his 13th, in 3:59.9. The record stands to the late Luigi Musso in 3:58.7, and dates from 1957 when he shared a Ferrari with Mike Hawthorn. (In C/D for July we wrongly attributed the record to Hawthorn.—Ed.)

Pedro Rodriguez continued his bid for the lead, but both Gendebien and Ginther were in front, and Michael Parkes was coming up with the third V12 SEFAC Ferrari immediately behind. After four hours' racing Ferrari held the first five places, with a G.T. car fifth, ahead of the out-and-out sports opposition.

By this time rain had begun to fall, and the average speed fell appreciably. In the meantime, however, there were retirements for mechanical reasons. An MG retired with a burned valve, and two Zagato Aston Martin DB4s went out with defective cylinder head gaskets. An AustinHealey broke an oil pipe, and then there were accidents. Hansgen drove his Maserati into a sandbank at Tertre Rouge, and the Vaccarella/Scarfiotti Maserati also went off the road. The most frightening accident occurred when Bruce Halford spun the Cooper Monaco coming under the Dunlop Bridge, and was thrown out of the car before it was reduced to a mere wreck. Coming down at speed in the G.T. Ferrari, Lucien Bianchi had a frightening moment when the rear-engined D.B. Panhard of Armagnac/Masson turned around in the Esses just in front of him, but no damage was done.

Among the leaders, the SEFAC Ferraris had against them the V12 of the Rodriguez brothers, who were old hands at Le Mans by now in spite of their young ages of 21 and 19. During the evening, when the rain gradually ceased, the lead was held for a while by Phil Hill and then by Ricardo Rodriguez, while Mairesse brought his car up to third place in front of you Trips.

Retirements continued, and before midnight the Berger/Bianchi G.T. Ferrari was out with engine trouble, while a short-circuit was enough to eliminate the similar car of Reed/Arents. Later on, the Colgate/Hawkins Austin-Healey Sprite retired with a broken piston.

The track was drying up during the night. The critical period of 3 to 5 a.m. approached, but the dreaded morning mist never amounted to much this year. Before that time, however, Stirling Moss's gallant efforts came to an end, when a head gasket blew as a consequence of a broken water hose. He retired at 1:35 a.m. when he was over two laps ahead of the nearest G.T. car, the Noblet/Guichet Ferrari.

The very noisy Lotus Elites had been going most regularly all night, almost keeping up with the twin-cam Triumphs, but then Malle/Carnegie ran out of fuel, and half an hour later Allison/Mac Kee suffered a broken oil pipe. The pretty little OSCA of the N.A.R.T. retired with a broken radiator hose before half-distance, and then the clutch packed up on the Border Reivers' Aston Martin. Other

retirements before half-distance were the Wicky/Benney A.C.-Bristol with a broken half-shaft and the Giancarlo/Rigamonti Abarth with a flat battery.

At 4 in the morning, the positions were:

Rodriguez/Rodriguez	Ferrari	167 laps	11:59:41.6
Hill/Gendebien	Ferrari	166 laps	11:56:27.1
Mairesse/Parkes	Ferrari	163 laps	11:56:26.2
Ginther/von Trips	Ferrari	162 laps	11:57:55.9
Salvadori/Maggs	Aston Martin	160 laps	11:57:07.3
Pabst/Thompson	Maserati	157 laps	11:59:30.3

It is extraordinary that the race average actually increased during this period, but in their bid for victory the Rodriguez brothers were driving faster and faster, and at half-distance were in fact leading the Phil Hill/Gendebien car by almost a lap, at the astonishing average of 116.4 mph. Team manager Tavoni gave the order to Hill/Gendebien to go after them, and as the sun peeped through in the early morning, the red cars were thundering round in about 4 minutes, 3 seconds, equivalent to 123.8 mph. The racing reliability of the V12 Ferrari is certainly striking. Nothing but routine stops had been made by any of the SEFAC cars so far, and the V6 was not much slower than the TRI and running with much the same reliability. During refueling stops water had to be taken on as well, however, on this car.

At 6 in the morning Gendebien was within seconds of Pedro Rodriguez, and they raced nose to tail for a long while until the factory car took the lead. Only one lap later, however, the Rodriguez car pulled up at the pits, where the hood was opened and lengthy investigations followed. Before the trouble was diagnosed as a faulty condenser and could be remedied, five laps had been lost to the leading car. Mairesse/Parkes thus rose to second position, while Ginther/von Trips went up to third place.

Back in the race, the engine sounding as good as ever, the Mexican-driven Ferrari set out to make up for the delay in a minimum of time, and laps in 4 minutes dead were turned (125.4 mph). In the meantime Phil Hill had taken over from Gendebien and drove on unworriedly, giving only a few seconds per lap to the young pursuers. Then tragedy struck von Trips, who found himself at Mulsanne with no fuel in the tank. This, on top of last year's eliminations for the same reason in the same team, is, if not inexplicable, then at least inexcusable. Two of the G.T. Ferraris also retired in the early morning, Tavano/Baghetti with ignition trouble and Trintignant/Abate with a broken rear axle.

Poppa and Pedro Rodriguez wait in vain for Ricardo to appear. Good show was ended two hours from the finish when faithful V 12 gave up the ghost.



Ricardo Rodriguez was catching Willy Mairesse, and by 9 a.m. they were on the same lap, but the leading car was still five laps in front. On the wet track of Saturday night the cars had been timed over a flying kilometer on the Mulsanne straight, both Hill/Gendebien and the Rodriguez brothers exceeding 164 mph. Probably still higher speeds were realized on Sunday morning, and even so they should be within the capabilities of the cars, which are thought to have a maximum speed of approximately 175 mph, with Le Mans gearing. By way of comparison it's interesting to note that the Moss/Hill Ferrari Berlinetta, the Frank/Kerguen Aston Martin DB4 Zagato coupe and the Hansgen/McLaren and Pabst/Thompson Maseratis were timed at over 160 mph.

All Aston Martin hopes were broken when the fuel tank in the Salvadori/Maggs DBR1/300 developed a leak at 10 a.m. At 11 there were still, however, 30 cars left in the race. With four hours to go the positions were Hill/Gendebien, Mairesse/Parkes, Rodriguez, Noblet/Guichet, Bonnier/Gurney, Pabst/Thompson and Gregory/Holbert. It began to look as if Porsche had been right in sacrificing speed for reliability, with the new streamlined cars fifth, seventh and ninth after twenty hours' racing, when suddenly an oil pipe burst on the Bonnier/Gurney car. Would 24 hours prove to be too much for the two remaining cars also, or was it just a stroke of bad luck?

Valves burned on the D.B. Panhard of Masson/Armagnac and the Lotus of Wylie/Hunt, while the Abarth/Porsche of Bucket/Monneret broke an oil pipe. The Stoop/Bekaert Austin-Healey 3000 blew its cylinder head gasket, and with just under two hours to go, the Rodriguez Ferrari retired after running a big-end bearing. The Mexican brothers and their father immediately started planning for Le Mans 1962!

Not until the Rodriguez car retired was the race average allowed to fall, and it was only in the closing stage of the race that Hill/Gendebien could afford to adopt a more reasonable rate of progress. The distance record, held by Flockhart/Bueb (Jaguar) with 2731.1 miles in 1957, had already been beaten in the beginning of the afternoon.

At 4 p.m. on Sunday, Phil Hill drove the winning car across the finishing line after covering 2779.9 miles in 24 hours at an average speed of 115.83 mph. Right afterwards came the entire Triumph team in close formation, a publicity trick successfully used by Ken Richardson last year as well. The Triumphs were the only team to finish intact. The Sunbeams were running very well, and Harper/Proctor won the Index of Energy while their colleagues Hopkirk/Jopp were disqualified for early refueling.

Olivier Gendebien now won the 24 Hours of Le Mans for the third time—the first was in 1958, when he was also partnered by Phil Hill, and the second last year, when his co-driver was Paul Frere, now concentrating on journalism. As for Ferrari, it was their fifth victory at Le Mans. This year, however, was the first time that a Ferrari won at a higher speed than the previous year's winner (ignoring of course the 1949 race, as no comparison can logically be made with 1939) and the first time Ferrari has secured consecutive wins on the Sarthe circuit. This victory, added to the Targa and Sebring wins, awarded Ferrari the 1961 Sports Car Championship.

The race taught us more about other cars, however, than about Ferrari. The V12 Type 68 Maserati is still a long way from being fully developed, but it is encouraging that one did in fact finish 4th. It has a fantastic speed potential but its cornering power and stability are not yet up to the standard set by the Types 60 and 61. A two-liter Type 60, driven by Briggs Cunningham and Bill Kimberly, was never among the leaders but managed to get eighth by force of regularity. If their schedule had been more ambitious, it is quite possible that they would have figured higher in the list of results.

—JPN

Masten Gregory and Lucky Casner doffed their caps for hard-hats to make it two in a row for Maserati at the Nürburgring.

COUP de CAMORADI

by Jan Norbye

DOWGA

▶ When the 1000-kilometer race on the Nürburgring was instituted, it was one of several events coming between the Mille Miglia and Le Mans and served as a basis for speculations on the outcome of the 24-hour classic. Since the degeneration of the Mille Miglia into a sort of rally with special sections, the Nürburgring sports car race has risen to assume World Championship importance. This year the so-called Mille Miglia was in fact run concurrently with the German event, the latter attracting 64 entries, a large proportion of which was running in the Gran Turismo class and consequently eligible for both, but in accordance with the current trend preferring to compete at the Ring. For the Camoradi team the trip to Germany was certainly well worth while as it was its second victory in two years.

As in this season's Grand Prix racing, the Ferrari stable is most impressive. The entry comprised two rear-engined 2.4-liter 280 bhp cars with detail modifications since Sebring,

lapped in 9:41.5 and Phil Hill in 9:49.2. Masten Gregory in the Birdcage Maserati was also quite fast with a lap in 9:45.9, but the surprise of the day was Dan Gurney's best with the Porsche: 9:43.9. The rear-engined Maserati of Scuderia Serenissima did not turn out until Friday, when it rained incessantly and parts of the circuit were foggy, and lapped very carefully, Trintignant in 11:27.6 and Vaccarella in 11:43.0.

Better times were realized that day, however, by Bonnier, completing the lap on his Porsche in 10:27.5, while Moss, having replaced the original two-liter engine with a 1.7-liter, which was used for the race, did 10:31.8.

The starting positions are fixed, not by swept volume as at Le Mans, but by the practice times of each car. Practically all competitors turned out for Saturday's practice and although the sky was overcast and a rather strong wind was sweeping in, the track remained dry. As von Trips got his

time down to 9:33.7 — within 1.7 seconds of Stirling Moss's 1959 sports car record — Moss showed his best in the Porsche with a lap in 9:37.1 which was adequate to place him second in the line-up, beating Ginther by 4.4 seconds and the Rodriguez Ferrari by 19.4 seconds. The Bonnier/Gurney Porsche was in fourth position after a lap in 9:43.9, exactly two seconds faster than the Camoradi Maserati.

The organizers paid tribute to the most popular German racing driver of all time by letting his widow, Frau Alice Caracciola, start the race on Sunday. The weather was exceptionally bright and hopes for a record run were high. As last year, Jim Clark beat Stirling Moss across the road when the flag fell, and the green car was first to move, but Moss, accelerating violently as the field came roaring up from behind, was in a clear lead as they entered the South Curve. Coming up behind the pits, as though they were in a Grand Prix and not a 1000-kilometer endurance race, the order was Moss, Clark, Phil Hill and Gurney. The Linge/Gregor Porsche lin-

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gered on the starting line and did not get going until the last of the field had disappeared, but still more unfortunate were Dickson/Halford with the two-liter Cooper, which refused to start at all and got away after a two-minute delay.

When the leaders reached the Karussel, the order was Moss, Phil Hill, Jim Clark, Gregory, Barth, Ginther, Mairesse in a G.T. Ferrari, and then Ricardo Rodriguez. Moss completed the first lap in 10:7.4 and was still leading Phil Hill as they reached the pit area. Richie Ginther had moved up to within a few seconds of his team mate. Behind the three



The Hill/von Trips Ferrari was slowed by carburetion problems. Trouble stemmed from the amount of water that was pulled through rear air intakes. Sighting hatch was interesting modification.

to be driven by Phil Hill/von Trips and Ginther/Gendebien. In addition, the Rodriguez brothers shared a V12 three-liter with wishbone independent rear suspension, entered by the North American Racing Team.

Porsche ambitions to win at the Ring remain unabated and the factory entered three RS models, with 1687 cc engines for Moss/Hill and Bonnier/Gurney, one with a new 1966 cc engine for Barth/Herrmann, all with carburetors and drum brakes, plus a disc-braked Carrera for Linge/Greger.

Challenging the main opponents were the two Scuderia Serenissima Type 63 Maseratis in the hands of Trintignant/ Maglioli and Vaccarella/Scarfiotti, the winning new Type 61 Camoradi-entered Maserati for Masten Gregory and Lloyd "Lucky" Casner, plus a solitary DBR1/300 Aston Martin, the same car which won this race in 1959 driven by Stirling Moss and Jack Fairman, now entered by the Essex Racing Stable for Jim Clark/Bruce McLaren. In the same class were also an Ecurie Ecosse Cooper, a Lotus XV, two well-prepared Swiss-owned Ferraris, one V12 and one four-cylinder Testa Rossa, and a very poorly-prepared Portuguese-owned two-liter Testa Rossa of 1956 vintage.

Practice started on Thursday, and with dry and fairly warm weather some fast driving was expected. The power and cornering ability of the rear-engined all-independently sprung Ferraris immediately became evident, as von Trips

Nurburgring 1000 Kilometers May 28, 1961 14.2 Miles Per Lan

	14.2	Miles Per Lap	
1	Gregory/Casner	Maserati	7:51:39.2
			(79.24 mph)
2	Rodriguez/Rodriguez	Ferrari	one lap behind
3	Ginther/Gendebien/von Trips	Ferrari	one lap behind
4	Abate/Davis	Ferrari G.T.	one lap behind
5	Mairesse/Baghetti	Ferrari G.T.	one lap behind
6	Hahnl/Zick	Porsche Abarth	one lap behind
7	Gunther/Mahle	Porsche Abarth	one lap behind
8	Linge/Greger/Moss/Hill	Porsche	one lap behind
9	Koch/Leinenweber	Porsche Abarth	two laps behind
10	Bonnier/Gurney	Porsche	three laps behind
		-	

Fastest Lap Phil Hill, Ferrari, 9:15.8, 91.72 mph





Less powerful cars gained ground during the deluge. With less punch and equal amount of stiction, Lotus and Morgan were almost big car's equals.

cars in the leading group, for they were clearly ahead of the others, came Clark's Aston Martin, Rodriguez's Ferrari and Gregory's Maserati. The first retirement occurred on the very first lap — the Ferrari of Gachnang/Caillet, with engine trouble.

Phil Hill passed Moss early in the second lap and by the time they reached the Karussel again he had built up a lead of seven seconds on the Porsche. On this lap, Phil Hill's time was 9:31.9. The order, by make, after two laps is interesting, particularly in view of the ensuing troubles and retirements: Ferrari, Porsche, RS, Ferrari, Ferrari, Maserati, Aston Martin, Ferrari, Maserati, Porsche RS, Ferrari, Porsche-Abarth, Porsche Carrera, Maserati, Ferrari, Lotus, Porsche Spyder.

Porsche now suffered its first loss — Barth came into the pits and after a while the car was wheeled away and put under a dust sheet with a blown head gasket. Ginther passed Moss as they came up the straight leading to the north curve, placing the two rear-engined Ferraris 1st and 2nd. The pace increased, and Moss's sports car lap record of 1959 went by the board as Phil Hill covered his third lap in 9:31.5.

The race average was a fantastic 87.06 mph, and Phil Hill continued to build up a substantial lead with a fourth lap in 9:29.7. Team mate Ginther was 48 seconds behind, but Moss was hanging on, only 8.5 seconds behind the second-place Ferrari. Down in the field, the Cooper which had made such a bad start was working its way up, and the next blow

to Porsche came when Gurney pulled up behind the pits with an obviously sick engine. As he came round again, he stopped at the pits, and it was diagnosed as ignition trouble. There followed a long pit stop, during which all tires were changed as well.

In the lead, Phil Hill covered his fifth lap in 9:25.9—90.1 mph. Only five years ago, this was very good for a Grand Prix car! Five years ago, the best that Fangio could do with the V8 Ferrari was 9:41.6, 87.74 mph. When Fangio did 9:17.4 during his incredible drive on the Maserati in 1957, we began to believe in miracles, and now, in 1961, here was Phil Hill, doing 9:18.4 in a two-seater with enclosed wheels, weighing 1300 pounds without fuel and driver, on his seventh lap of a long-distance race. Could this go on?

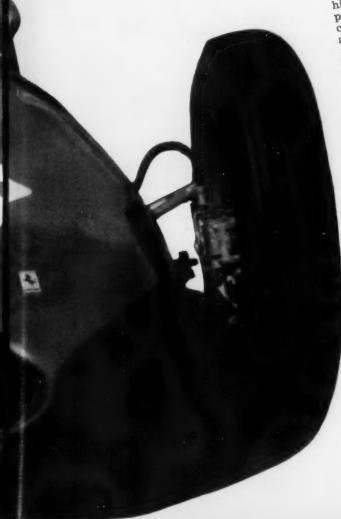
In the Porsche pit, the Bonnier/Gurney car was still stationary. It was the only one there, and yet the drivers seemed to know better than the mechanics what had to be done. It is true that two mechanics were busy in the engine compartment, but Gurney changed the rear wheels himself and Bonnier helped him check tire pressures and also cleaned the windshield. If this is typical of the pitwork of Germany's leading racing factory, it might explain the mechanical difficulties which should have been eliminated during preparation of the cars.

After a sensational lap in 9:15.8 (91.72 mph) Phil Hill did just one more before coming in for a tire change. Tire wear, at the pace the car had been going, (Continued on page 70)



Weird things happen at Zandvoort. This year a full field of little G.P. cars went almost as fast as last year's big ones without a single pit stop or retirement!

by Jan Norbye



• The 1-2 Ferrari victory at Zandvoort came as no • The 1-2 Ferrari victory at Zandvoort came as no surprise after the race-winning potential of the latest F.1 cars was revealed at Monaco the week before, yet the cars was revealed at Monaco the week before, into a prevented from degenerating into a cars was revealed at monaco the week perore, yet the Dutch G.P. was prevented from degenerating into a Ferrari demonstration by the brilliant driving of Jim rerrari demonstration by the printant driving of Clark and Stirling Moss in virtually outclassed cars.

Speeds at Zandvoort's sand dunes are about 30 percent Speeds at Zandvoort's sand dunes are about 30 percent higher than Monaco's so roadholding became a major point of attention. Ferrari typified the 1961 rear-engined point of attention to varying courses. Spring rates shock pare's adaptability to varying courses. point of attention. Ferrari typined the 1901 rear-engined cars' adaptability to varying courses. Spring rates, shock absorber settings, camber angles and toe-in of both front absorber settings, camper angles and toe-in of both front and rear wheels can all be changed fairly easily. General and rear wheels can all be changed fairly easily. General Motors' Maurice Olley (best known now perhaps for his work on the Corvette, although he spent many years on Sir Happy Royce's design team) ofter witnessing the 1949. work on the Corvette, although he spent many years on Sir Henry Royce's design team) after witnessing the 1948 Grand Prix of the Auto Club of France at Rheims, and Prix of the prengunged negative camper of the prengungen negative camper of the prengungen negative camper of the prengungen negative camper of the Grand Prix of the Auto Club of France at Kneims, commented on the pronounced negative camber of the rear wheels of the Type 158 Alfa Romeo (which had swing axles) and its effect on cornering nower compared rear wneels of the Type 158 Alfa Romeo (which had swing axles) and its effect on cornering power compared swing axles) and its effect on cornering power compared with the rigid-axle Maseratis and Talbots. The variations with the rigid-axie Maseratis and Taibots. The variations in steering geometry he would have found at Zandvoort on May 22 mont for herord his modistion of that the on May 22 went far beyond his predictions at that time. on May 22 went far beyond his predictions at that time.

During practice the complete wishbone assemblies on
Richie Ginther's Ferrari were replaced by others giving
righty increased possibly camber and possibly reduced visibly increased negative camber and possibly reduced

In practice all the Ferrari drivers experienced rear-end breakaway on the slower corners (although the car is breakaway on the slower corners (although the car is basically understeering) and on the first day neither and on Wolfgang von Trips and approach Stirling Moss's 1:36.2 lap time in the could approach Stirling Woss's 1:36.2 lap time in the Monaco-winning Lotus. Won Trips came closest, 0.4 Monaco-winning Lotus. Won Seconds slower, then Ginther, 0.5 seconds slower and Hill seconds slower. To place these apparently insignificant 0.8 seconds slower. To place these apparently insignificant seconds slower, then Ginther, u.5 seconds slower and fill, 0.8 seconds slower. To place these apparently insignificant in seconds slower. u.s seconds slower. To place these apparently insignincant fractions of a second in perspective, it should be realized that the seven fastest cars on the starting grid were all within one second of each other. To avoid the unfortunate that the seven rastest cars on the starting grid were all within one second of each other. To avoid the unfortunate within one second of each other. To avoid the unfortunate consequences of last year's regulations which said that the grid would consist of the fastest 15 cars of those the grid would consist of the practice times the idea of their practice. tne grid would consist of the rastest 15 cars of those invited, as based on their practice times, the idea of invited, as pased on their practice times, the idea of qualifying times was abandoned. Only 15 entries were

The last practice session was clearly dominated by Ferrari, although the four silver cars from Zuffenhausen must have put in more practice than any others. All the invited, plus two reserve nominations. rerrari, aithough the four sliver cars from Zuffenhausen must have put in more practice than any others. All the Ferraris had the 190-bhp 120° V6 engine, looking and sounding typically Ferrari

After switching from 6.00 x 15 rear tires to 6.50 x 15, in ther was the first to break the 1.26 harrier with Ginther was the first to break the 1:36 barrier with a lap sounding typically Ferrari. onther was the first to break the 1:30 partier with at 1:35.9. Then you Trips did a shattering 1.35.7.

Phil Hill's best time up to then was 1:36.3, just before practice closed he took the car out for five laps, one of which equaled von Trip's time. Hill's car was then still running with negligible camber on the rear wheels, but by race day it was converted to approximately the same

angle as the others.

Rear-end breakaway could still be provoked, of course, and it's interesting to speculate on the importance of tire pressures. Ferrari ran higher pressures than the British teams, 36 psi in the front tires and 40 in the rear which is two and four psi respectively more than used by Cooper. This slight difference in pressure did have an effect on the wear. Tire wear on the center of the tread or offset to the inside was much more pronounced than on the British cars, where wear was practically even. It's interesting that although Dunlop R5 tires were used exclusively, Ferrari was the only make to retain Rudgetype wheels made by Carlo Borrani. B.R.M. has centerlock disc wheels, Cooper four-stud bolt-ons, Porsche five-stud bolt-ons, and Lotus six-stud bolt-ons. general use of light-alloy disc wheels in Grand Prix racing, of course, is permitted only as a result of the distance limitation which eliminates the need for tire

For the 1961 Dutch G.P., the pits were used only for signaling boxes. The race was noteworthy in having produced 15 finishers from 15 starters with none making

any pit stops.

The only accident occurred in practice when Ian Burgess, a reserve entry on the Camoradi Lotus, found himself with a broken wide-open throttle at the end of the pit straight, and he drove into the sand dunes on the outside of the approaching bend. He was unhurt but the front suspension was badly bent.

The second reserve entry was Masten Gregory, driving the Camoradi Cooper, who equaled John Surtees's practice time of 1:36.8. The fastest Cooper driver was Jack Brabham at 1:36.6 but his team-mate Bruce

McLaren couldn't get below 1:38.2.

Ferraris dominated the front row. Next to Moss, in the second row, was Graham Hill in the B.R.M. which had lapped at 1:36.3. It's not likely that Wilkie Wilkinson has extracted more power from the Coventry Climax engine than John Cooper, Alf Francis or Colin Chapman, so the credit for this goes to the driver rather than the car.

Grand Prix of The Netherlands Zandvoort, May 22, 1961 75 Laps, 2.6 Miles Per Lap

			F
1	von Trips	Ferrari	2:1:52.1
			(96.05 mph)
2	P. Hill	Ferrari	2:1:53.0
3	Clark	Lotus-Climax	2:2:05.2
4	Moss	Lotus-Climax	2:2:14.3
5	Ginther	Ferrari	2:2:14.4
6	Brabham	Cooper-Climax	2:3:12.2
7	Surtees	Cooper-Climax	2:3:18.8
8	G. Hill	B.R.MClimax	2:3:21.9
9	Brooks	B.R.MClimax	1 lap behind
10	Gurney	Porsche	1 lap behind
11	Bonnier	Porsche	2 laps behind
12	McLaren	Cooper-Climax	2 laps behind
13	Taylor	Lotus-Climax	2 laps behind
14	de Beaufort	Porsche	3 iaps behind
35	Herrmann	Porsche	3 laps behind

Fastest Lap

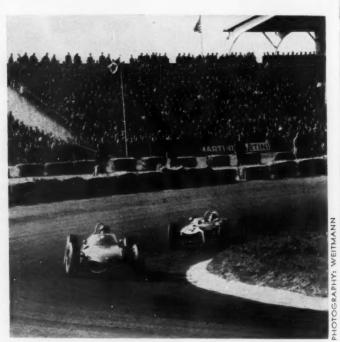
Clark, Lotus-Climax, 1:35.5 (98.15 mph)

World Championship Points to Date

		and an analysis of the same
1	Moss	12 points
2	von Trips	12
3	P. Hill	10
4	Ginther	8
5	Clark	4
6	Gurney	2
7	Brabham	1
8	McLaren	1



Jim Clark, highest-placed Britisher, waged a race-long battle with Ferrari-mounted Phil Hill for second place. In the last laps, Clark, bothered by increasingly erratic steering, wisely accepted a third.



The duel of the day was waged between Richie Ginther's Ferrari and Moss in the Rob Walker car. Lotus handling allowed Moss to go inside on the last corner before finishing in the fourth slot.

Hill's team-mate Tony Brooks's best was 1:36.8.

The same applies to Dan Gurney's 1:36.4—seconds better than any other Porsche. Gurney, Bonnier and Herrmann were on fuel-injected cars with wishbone front suspensions while Baron de Beaufort drove a carburetor model with trailing links. The factory cars had six-speed transmissions and on such a short course, gear selection would seem to be a problem in its own right. There was, in fact, some discussion between Bonnier and Gurney as to the actual use of fourth gear!

Innes Ireland was hospitalized with leg injuries sustained during his accident in practice at Monaco so Team Lotus cars were entrusted to Jim Clark and Trevor Taylor—the former driving the 1961 model and the

latter a 1960 F.2 car.

As expected, the red cars took the lead at the drop of the flag, but the team formation was soon to be broken. Graham Hill made a very determined start and both Jim Clark and Moss passed Richie Ginther. Leading the pack was a very cool Wolfgang von Trips, ahead of Phil Hill





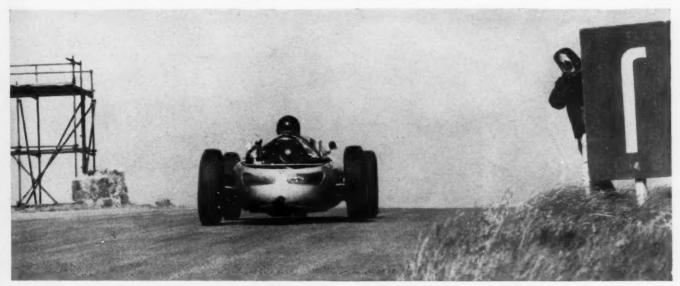
Special testing period on Sunday morning found Ginther's Ferrari being fitted with yet another set of coil springs and shock settings. Cut-and-try method brought about team's winning adhesion.

by mere seconds.

After five laps the order was von Trips, Phil Hill, Clark, Graham Hill, Ginther, Moss, Brabham, Gurney, Surtees, McLaren, Brooks, Bonnier, Taylor, Herrmann, de Beaufort. Moss was pressing Ginther and passed him on the 12th lap. By then the fastest lap had been recorded by Jim Clark — 1:35.5, faster than any practice lap. The speed of the Lotus, firmly in third place, was astonishing, for the latest wind-cheating efforts of Colin Chapman, such as enclosing the front wishbone pivot points and the shock absorbers and streamlining the actual wishbones, are clearly not enough to make up for a deficiency of 35 bhp in comparison with the Ferrari. Admittedly the four-cylinder 1498 cc Coventry Climax has good medium-range torque, as illustrated by Phil Hill and Jim Clark being so evenly matched in acceleration, but the 120° Ferrari engine also has a very smooth torque curve - unusually smooth for a G.P. Ferrari.

The vanguard resolved itself into three cars: von Trips, Phil Hill and Jim Clark. Graham Hill was no longer within striking distance, leading Moss by seven seconds while Clark was only three seconds behind Phil Hill.

Ferrari team manager Romolo Tavoni gave the "faster" signal to both von Trips and Hill while Ginther, in sixth place, was obviously doing all he could in a duel with Brabham. It was interesting to compare the Ferrari



A lidless Porsche goes up the hill during practice. Factory team was composed of three long-chassis cars with coil spring front suspensions plus a Syracuse machine for local driver de Beaufort.

Porsche team driver Dan Gurney looks pensive as he runs up his fuel-injected flat-four engine. Problems with the F.I. system have been the province of onlooking development chief von Rücker.



racing personnel of 1961 with the team of 1954. The atmosphere is much the same, as may be expected with the team again winning races, but the personalities are, in many ways, contrasting. Seven years ago team manager Nello Ugolini would sit, oblivious to all but his stopwatch and the lap chart during both practice and the race, never exerting his authority on anyone but the drivers. Today Tavoni, tall and smiling, goes as far as to give a hand in signaling, walking around with his stopwatch, only stopping to add to his lap chart. Always close by is Ing. Chiti, the chief designer, who gives directions to the mechanics and in general takes an active part in pit management in contrast to Aurelio Lampredi, who introduced Ferrari to the four-cylinder engine and usually came to every race but mostly as a spectator. Mechanics' instructions in those days were given by Meazza, the capo di squadra, who needed advice from no one in such matters, but left Ferrari to join Bugatti when the Type 251 was being developed at Molsheim.

The Ginther-Brabham duel continued and Brabham was first for several laps after a spectacular pass on the way out of bowl-shaped Tarzan corner, seeming to draw away from the red car on sheer (Continued on page 64)

This is for those who have looked longingly at sports cars but have lacked the cash to leap.

CANOUNI CANOUNI asports



30/CAR AND DRIVER/SEPTEMBER 1961



 Along with the crusty old sports car enthusiast who had a TC in '49, a Porsche in '53 and now drives a Ferrari, there is another type who loves sports cars and would own one if he could afford it. I'm in this group . . . like most of us, in fact, with a house, a wife, a couple of kids and a domestic sedan in the carport. I buy the sports car magazines the day they hit the stands. gaze enviously at the Mercedes, Jaguars and Austin-Healeys as they roar by me in traffic, but my favorite reading matter doesn't offer much encouragement to a man on a budget. Maybe, if I already owned the car, I could get up \$6.95 (plus postage) for a British-made racing mirror, but four thousand dollars (or best offer) for a "Never raced, never wrecked", or wire wheels and a caliper brake system for six hundred, and a hand-crafted steering wheel for just under a hundred, leaves me shaking my head as I check for that twenty-dollar bill that has to last out the week. These are my kind of people, and to them this article is dedicated. It can be done on a budget, and by a man whose mechanical achievements have never exceeded the installation of a set of spark plugs or changing a tire.

Let me detail. The MG-TF always appealed to me. The lines and long low hood smacked of "sports car", even though the hood covered mostly shins, and I could picture myself driving one to work, sneering at the men in the old sedans and flirting through traffic with a rumbling exhaust note. In the

meantime, I stuck to driving my '49 Chevy.

I made the rounds of the used car dealers with no luck. The want-ads weren't much help either. Finally, I heard about a seller. For considerably less than a month's pay, I found a TF that would run. It was for sale — As is! And, as it was, I bought it. The top was shot and the dents in the fenders weren't too deep. The leather upholstery was in good shape, but a few seams had parted. One glove compartment was missing. The engine was oily and dirty-looking, the tool box under the hood was empty except for the jack and some miscellaneous parts. The owner said he used to have an owner's manual, but he'd lost it. I bought it quick before he changed his mind. It was cheap.

On the way home, the smoke from the tail pipe seemed to thicken. Besides that, the crankcase vent pipe was forcibly discharging a dense oily cloud under my feet and much of it worked its way through the tattered rubber accordion around the brake and clutch pedals and deposited itself on my shins, hands and face. When I let up on the accelerator, the tappets sang a clattering song. I needed to down-shift, not once, but twice, to climb a shallow hill near my house. I was still undismayed. How much could a set of rings cost? Few little maintenance jobs and it would be good as new. Sure it would!

I tried to kid myself.

When I took my wife for a ride in it, she claimed asphyxiation and demanded to be taken home. The kids thought it was "neat", but got sick to their stomachs after ten minutes. I drove it to work daily, huddling over the wheel when I stopped at a red light, trying to pretend that the cloud of smoke that engulfed me came from somewhere else. The car backfired badly and I had four wet, oily plugs to clean and re-install every three days. The car could out-drag anything I encountered, if it was earlier than a 1940 model or driven by an octogenarian. I bought cheap, bulk oil and added a quart every fifty miles. Twice, I ran out of oil and suffered the ultimate humiliation of going into a gas station and having to add six quarts to get it up to the "Full" line on the dip stick.

When the weather turned colder, the car wouldn't start. The battery ran down and the engine wouldn't even sputter. After one snowstorm, the car was buried in a drift for three days. It had no power and couldn't push its way through a three-inch snow. My intelligence began to be questioned. The kids made jokes about "Daddy's car", and the neighbors frowned when I started it up and fogged the air for blocks around. I took it to a foreign car

repair shop, "Imported Motors Overhaul, Ltd.", the sign said.

The owner was a friendly, sympathetic type. He crawled out from under a red Jag and looked pityingly at the TF sitting there, idling erratically, puffing smoke as if that were its function. He raised the hood (only he called it a bonnet) and the clatter of the tappets almost drowned out his words.

"Trouble with these little engines," he said, sarcastically, "Every fifty thousand miles or so, they need some attention."

"How much," I quavered, "For an overhaul? A minor overhaul? Maybe new rings, couple of gaskets, re-set the tappets. . ." My voice ended on a hopeful note. There was a spreading oil stain on the floor under the car. I should have shut it off.

He sounded like the voice of doom.

"Oh, let's say \dots anywhere from a hundred-fifty to four-fifty, depending on what we run into."

I was horrified

"That much? Just for rings?" I almost shouted at him.

He looked at me as if I were simple-minded.

"Look," he said, "We open her up, see? New rings, maybe grind the valves. A hundred dollars, cheap and easy. But the cylinders are tapered. Engine as tired as this one, that's nearly a certainty. So, you need a rebore and four new pistons. If the rods are gone too, probably the crankshaft throws are bad, so are the mains. Pretty soon, it all adds up. You want a puddle-jumper, leave it the way it is and put in cheap oil! You want a car. . ." (Continued on page 68)



32/CAR AND DRIVER/SEPTEMBER 1961



Road Research Report: VOLVO P 1800

▶ The hundreds of long-suffering enthusiasts who wrote checks for \$3800 for the new Volvo P 1800 when it was introduced at New York's International Auto Show in April, 1960 are at last beginning to receive their cars. After putting the sleek coupe through its paces we feel their wait was well worthwhile. For the rest, who decided to hold off until the cars were actually available, we offer our condolences — they're missing out on some really fine driving and they too may find they'll have a bit of a wait before production gets up a full head of steam.

Just as the Jaguar XKE was acclaimed the star of the 1961 show, the P 1800 won that distinction in 1960. Still, when the Volvo was "reintroduced" earlier this year public interest was unabated although the element of surprise was, of course, dulled.

RARE AND DESIRABLE TYPE

Until the P 1800 came along, attractive 2/4 seater coupes capable of over 100 mph were scarce unless the buyer was able to pay \$4000 and up (usually very "up"). However, it represents a type of automobile that is extremely attractive to enthusiasts and even though American manufacturers have already begun to cater to this market and though the P 1800 has gotten off to a slow on-sale start, it has merit in is own right that should augur well for financial success. At this point it would appear that the main problem facing A.B. Volvo is getting enough cars to the United States to appease anxious purchasers. The company's sales in the U.S. have been firm. Even without the highly desirable P 1800, its January, 1960 sales here were enough to move it from tenth to sixth position in the thengenerally-lagging imported car sales race. Future plans call for expanding and solidifying the dealer network for even greater market penetration.

The lines of the coupe are unusual and distinctive without being grotesque; they are well within the confines of the "G.T. image." The outward appearance of the car expresses in smooth, flowing lines the smooth, flowing performance of the machine. It doesn't look like a racing car, it doesn't go like one and it wasn't intended to do either. Volvo had in mind the construction of a solid road car, one which would cruise quietly,

capably and safely at speeds in the 80-mph range. As such it's a resounding (though quiet) success. Its wind-cheating shape is such that the most noise at 80, for example, comes from the four-bladed fan. Wind noise is surprisingly low and exhaust noise, though louder than the prototype we tested in Sweden (see SCI, February, 1961) is almost disappointingly muffled. A further inducement to fast touring is the lack of breezes even with the side windows and vents wide open and the high-silled doors and rattle-free unit body give occupants a feeling of being nestled inside a transportation capsule.

SMOOTH PERFORMER

The 108.6-cubic-inch engine has an unbreakable feel all the way up to its 6000 rpm red-line, but feels happiest between 3000 and 4500 rpm. A particularly stiff accelerator return spring may give the first-time driver the impression that the throttle has to be floored for anything to happen. However, the rapid rise of the tach and speedometer needles show this is not true. Volvo says the minimum usable rpm is about 1500. We'll go along with that; although it's possible to go lower in a gear, the engine is definitely starting to lug. The nylon-bushed linkage is progressive in its action and assures parallel action of the two SU carbs.

The engine in our car was adjusted a bit low and idled lumpily in New York traffic on the city's hottest day of the year, but the water temperature stayed below 212° and the oil remained cool. The oil circuit plumbing is such that the lubricant is cooled by water from the radiator and throughout all our testing remained well below the danger point. Underway, oil pressure when hot was about 50 pounds; idling it registered the specified 5 to 10 pounds. Less than a quart of oil was used in all our driving, which included more than 500 miles in all sorts of conditions, having started when the engine had less than 500 miles on it. We were fortunate with the weather; it ran from temperatures in the 90s through crisp cool evenings and into soggy, wet, cold nights. The engine always started promptly, warmed up quickly and registered very reasonable fuel consumption even under the toughest and fastest driving situations.

Access to the engine is excellent. The forward-hinging

hood lifts high and the distributor, oil filter and spark plugs are readily at hand. The battery mounted on the firewall may be subject to some heat, but it's easy to service. The brake and clutch master cylinders are easy to check or fill and all of the electrical controls are protected from dust and water yet are easy to service.

OTHER POWER POSSIBILITIES

So spacious is the room under the hood that we couldn't help wondering whether one of Buick's aluminum V8s wouldn't fit. Width is limiting and there would have to be some alteration to the firewall, but perhaps the pioneering struggle would be worthwhile to get an extra 55 bhp, compared to the standard 100 bhp engine. This tail-twisting, we feel, would make the P 1800 really perk. It would provide a power lift many drivers would welcome but wouldn't turn the car into a rolling nightmare. Perhaps we may have a story on such an engine swap before too long.

For those who believe in working with what's at hand, the B18B engine used in the car should offer ample tuning scope. Its massive five-bearing crankshaft should be up to any power boosts that might be envisioned and the block and head are meaty enough to permit boring out for greater displacement and milling for more compression.

All of these comments are not to suggest that the stock engine is inadequate; it's just that we're sure readers will wonder what the possibilities are and we want to suggest two. Unfortunately we do not yet have full details on hopping up the B18B or carrying out an engine swap; when we do we'll pass them on.

TRANSMISSION IS PRECISE

The four-speed, all-synchromesh transmission deals quickly and effectively with any road situation whether it be dropping back into first for quick acceleration just as the light turns green or flipping the dash-mounted switch into overdrive for breezing down the freeways. The ratios are well-suited to the engine and the weight of the car and the lever movement is crisp. The feel was less than the "knife-through-butter" we remember from the four-speed PV544s, but this may be due to the extra linkage (see photo) or to the fact that the unit was not yet fully broken in. Nevertheless we had no complaint about its operation. The shift lever features a spring loading which enables fast "straight-line" shifts to be made from second to third and third to fourth, but which requires slight side pressure in engaging first and second. A lock-out prevents accidental engagement of reverse when shifting to first; the lever must first be lifted, then moved left, then forward. It's not too easy but it's positive. The engagement of overdrive is instantaneous with the flipping of the switch. There is no need to back off on the accelerator although the actual shift will be quicker if you do. Shifting back into fourth requires simultaneous pressure on the accelerator and the toggle-flipping ritual to prevent a lurch.

The hydraulically-operated clutch has a pleasant action, having neither long travel nor stiff action. It didn't slip under fast starts and no grabbing was ex-

perienced. The vacuum-assisted brakes (disc in the front and drum in the rear) gave ample stopping power. The amount of retardation was always directly proportional to the amount of pressure exerted on the pedal. The only objection about the pedal layout was that the accelerator is located nearer the firewall than either the brake or clutch and heel-and-toeing was pretty much out of the question. The accelerator pedal is of the organ type and it looked as if it would be possible either to substitute a hanging pedal or relocate the existing unit. The relation of the pedals to the steering wheel is good, allowing quick footwork without banging your knees on the wheel. The wheel itself is moderately dished and of a handy, small diameter. While it's non-adjustable, the seat positioning range should satisfy most drivers.

SOUND AND FEEL OF MOTION

In our test car, which was one of the first production types in the country, we heard some clunking noises from the rear end. Occurring when accelerating and backing off at low speeds, they seemed to be caused by a built-in slackness of either the universals or the



rear axle mounting. Some rear-axle hop was also experienced, although it was slight. We were informed prior to going to press with this Road Research Report that some minor changes have been made, which include new shock absorbers, rubber mountings on the rear axle and added sound insulation between the rear occasional seat and the trunk. It's quite likely these slight changes will silence, in cars currently being delivered, the sounds which we interpreted to be natural but somewhat distracting.

Pirelli Cinturato tires are standard equipment, following an exhaustive test by Volvo of all available types. Capable of sustained speeds in excess of the car's maximum, they are of the latest type, having squared-tread shoulders. They have a tenacious bite on all surfaces, wet or dry, right up to the limit of the car's capabilities. Cornering noise, which gets louder as you near the limit, is not excessive even when the side thrusts are of massive proportions. Roll is unapparent within the car. The ride is comfortable without becoming soggy. The combination of tires (Continued on page 58)



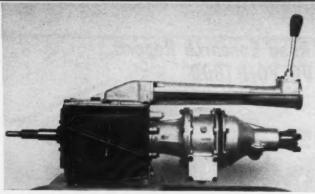
The yellow and blue of the Swedish flag are used in the stylized V. The side windows have a slight curvature, and the back ones are fixed shut.



The wedge-shaped P1800 looks best when it's in fast-motion although the interesting body has a lot of eye-pleasing detail for close scrutiny.

Both the shoulder harnesses clip to the central forged bracket. More comfort from the harness could be achieved with a higher swivel point.





Volvo's own rugged four-speed, all-synchromesh transmission is used. A remote shift linkage and Laycock de Normanville overdrive are added.



The P 1800's broad, low hood permits excellent visibility, but the rearview mirror blocks the right front fender a bit because of the low seat.

One of the two very neat interior lights, it's operated by lifting the diffusing lens. There is also a door-operated switch and a manual override switch which the driver can use. The pierced headliner helps to reduce interior noise to a low level.

Volvo designed its own oil cooler for the P 1800, similar to deeper ones on its marine engines. It bolts to the right side of the engine, behind the spinon filter. Water circulating through it speeds warm-up and helps keep the engine temperatures stable under way.

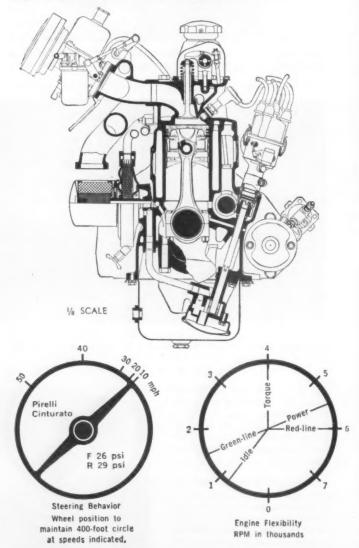




Road Research Report: **VOLVO P1800**

Number of U. S. dealers: Planned annual production: Value of spare parts in U. S.:

Volvo Distributing Inc. 452 Hudson Terraco Englewood Cliffs, N. J. 400 6000 (late-1960 estimate) Not available from the manufacturer



PRICES:

Basic price Options fit	ted:			• •		 	*	 \$3	17	9!	5	a	t	E	ns	it	(0	12	S	t	P	10	ts	of	Entry
Overdrive Total price			 0					 												0	0					\$145
total price	8.2	reared		 				 																	 	23340

OPERATING SCHEDULE:

Fuel recommendedPremium
Mileage
Range on 12-gallon tank
Oil recommendedSAE 10W-30
Crankcase capacity
Change at intervals of
Number of grease fittings 8 (4 on certain production groups)
Lubrication interval
Most frequent maintenance: Lubricate distributor and hand brake pull rod
—6000 miles

ENGINE:

Displacement																														
Dimensions .									.1	Fo	u	r	0	y	١.	-	3	. 53	1		in	1	00	re	1.	3	3.1	5	n s	troke
Valve gear .	 			 		 		DI	15	h	ro	d	S.		V	er	t	ic	a	1	0	ve	rt	e	ad	1	val	ve:	s in	line
Compression																														
Power (SAE)																														
Torque																														
Usable range																														
Corrected pis																														

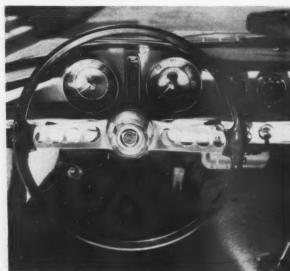
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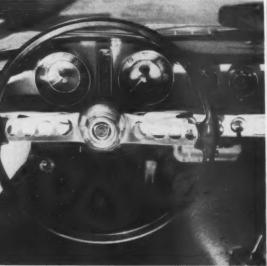
W	eelbase	n
T	ad	n
2	ngth	n
	ound clearance	
	spension: F, ind., coil spring, wishbones, anti-roll bar; R, rigid axle coil spring, trailing radius arms and Panhard rod.	
T	rns, lock to lock	3
T	rning circle diameter between curbs	
T	e and rim size	5
	essures recommended F 26. R 29 ps	
	akes: type, swept area F 10 7/8 in disc, R 9 in drum; 350 sq i	
C	rb weight (full tank)	15
P	rcentage on driving wheels	6

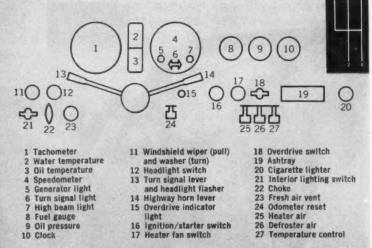
DRIVE TRAIN:

Gear	Synchro?	Ratio	Step	Overall	Mph per 1000 rpm
Rev	No	3.25		14.80	- 5.1
1st	Yes	3.13	57%	14.25	5.2
2nd	Yes	1.99		9.08	8.2
3rd	Yes	1.36	46% 36%	6.20	12.1
4th	Yes	1.00		4.56	16.4
4th OD	Auto	0.76	32%	3.45	21.7

Final Drive Ratios: 4.1 to one standard; 4.56 with overdrive.



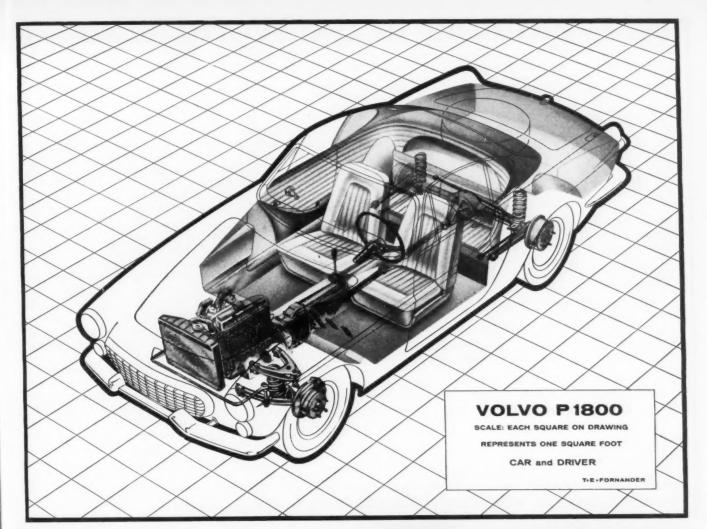


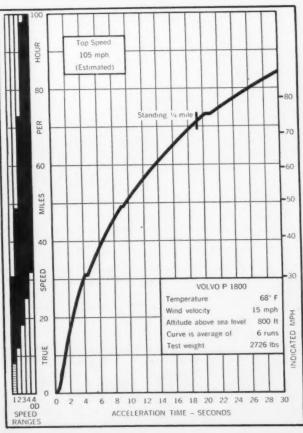


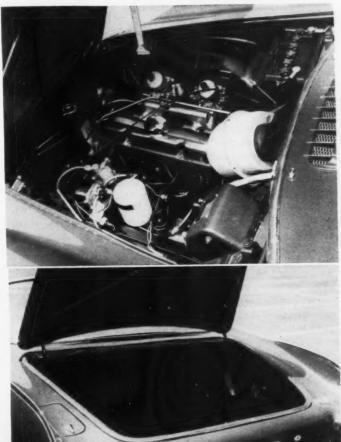
- 1 Tachometer
 2 Water temperature
 3 Oil temperature
 4 Speedometer
 5 Generator light
 6 Turn signal light
 7 High beam light
 8 Fuel gauge
 9 Oil pressure
 10 Clock

- 18 Overdrive switch
 19 Ashtray
 20 Cigarette lighter
 21 Interior lighting switch
 22 Choke
 23 Fresh air vent
 24 Odometer reset
 25 Heater air
 26 Defroster air
 27 Temperature control

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Bodybuilders to the World by John Bentley

Englishmen Dick and Alan Jensen have come a long way from the first fraternally-customized Austin 7. Today their plants turn out thousands of Austin-Healey shells, and assemble and finish the sleek Volvo P1800 coupe.

▶ It was the booming year of 1926 and one of those beautiful and balmy spring days such as only England knows. The two young men hightailing along the Great North Road between Coventry and Birmingham seemingly hadn't a care in the world. Driving their low, sleek roadster at a gait that outpaced other traffic, the brothers had good reason to feel pleased. The car, which was their own creation, excited admiring glances and no-one could have guessed that its chassis and engine had begun life, three years earlier, as part of a humble Austin Seven — a midget shaped like a bathtub that sold by the thousand.

Suddenly Alan Jensen nudged his brother, Dick. "Don't look now, old boy, but we're being followed by some highly

excited type!"

"Well, at any rate," Dick grinned, "it's not a police car."
"Wonder what's biting him?" Alan half turned to stare back at their pursuer, who was now blowing his horn and flashing headlamps on and off in broad daylight, though without gaining much ground. "Slow down, Dick, and let's find out."

Dick Jensen pulled off to the side to give the pursuing sedan a chance to catch up, and soon an astonished and voluble gentleman hopped out. "I say!" he exclaimed, raking the Jensen creation with quick, admiring glances. "That's pretty nice, you know. Never saw anything like it before. Mind telling me what it is? I'm the chief engineer of the Standard Motor Company, by the way."

The brothers modestly allowed as how there was an amusing little story connected with their car. About a year earlier, when Alan was 19 and Dick 16, their father had offered them a choice of birthday presents. Each could have a motorcycle, or — on Dick's birthday in April — they could own a car between them. They chose the car and at once set about modifying it to their own design.

"I can tell you, sir, we didn't get much sleep the Saturday when the car arrived," Dick Jensen recalled enthusiastically. "In fact, we hardly drove the thing at all before we started

taking it apart."

"You did a fine job," the Standard engineer congratulated them. "I can see it's underslung. And, of course, longer. What about the body? Did you build that too?"

"You'd be surprised what can be done with plywood,

leather fabric and glue," Alan told him.

"Amazing," said the gentleman. "Today's cars all look like carriages — high and upright. But this — I mean those smooth, low, horizontal lines — it's a sensational idea!" Then came the bombshell. "Think you could duplicate that body on our Standard Nine chassis?"

Dick and Alan Jensen exchanged quick glances, then nodded in unison. Yes, indeed. No reason at all why it couldn't be done. Of course the Standard chassis, too, would need modifying, and that would take a little time.

"No matter. I'll have a new chassis sent to you tomorrow," said Standard's chief engineer. "If you can duplicate that body, you're in business! I know it'll sell. Stake my reputation on it. Take your time and send us the bill. If you need any help with tools, let me know. . ."

That was how the first Standard Avon two-seater sports model came into being, followed later by an equally radical and handsome Standard Avon coupe, also a Jensen brainchild. Both models were an unqualified success and soon appeared in large numbers on English roads. In the beginning the Jensen brothers got very little publicity; in fact they were not even working together at the time. While

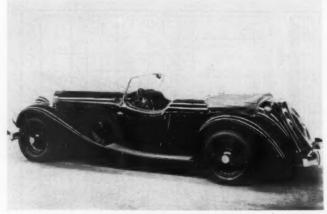
Dick Jensen was still serving an apprenticeship with Wolseley Motors, the elder Alan became designer and engineer for the Avon body company which brought to life the creations of the brothers. By 1930, however, what had begun as an avocation became a highly paid vocation, both for Frank Alan and Richard Arthur Jensen. They formed a partnership with W. J. Smith & Sons Ltd., of West Bromwich, and began building another model which for the first time bore their name. This was the Patrick-Jensen, a modified Wolseley Hornet chassis equipped with a Jensen sports body.

From then on there was no stopping the talented and softspoken but determined Jensen brothers. Soon they joined the West Bromwich Motor & Carriage Works at Carter's Green near Birmingham, where the original premises (rebuilt after a World War II blitz) are still in operation. Jensen Motors was formed as a subsidiary, but by 1936 the subsidiary became the main activity and Jensen Motors took

over the parent company.

Of the numerous modified chassis and custom bodies turned out by the Jensens in the Thirties, one of the most interesting was a Ford built for Clark Gable. By the time the chassis travelled from Detroit to Birmingham, England, then (fitted with a handsome body) recrossed the Atlantic and made its way to California, it covered 11,000 miles before the owner ever took delivery.

But by 1936 the inevitable happened. The Jensen brothers came out with a complete car of their own. It was Edsel Ford who gave final impetus to the idea during a visit

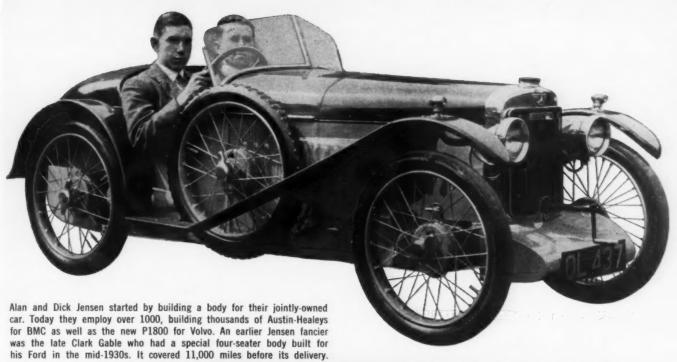


The distinctive 1934 Jensen featured windscreens for the rear-seat passengers. A Ford V8 and two-speed rear axle gave it a 90 mph speed.

The fraternal customizing effort on a 1926 Austin boomed into a big business. This Carter's Green factory is one of several Jensen units.



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to England, when he approved the use of a Ford V8 engine in the new Jensen car. Naturally this creation embodied many novel ideas and was not intended for mass production. On the contrary, it was aimed at a limited number of connoisseurs who could afford a hand-built machine. Known as the 31/2 liter Jensen, this highly original newcomer was the world's first production automobile to feature an overdrive as standard equipment. As a result it could maintain 90 mph indefinitely at 3000 rpm, cover 20 miles on a gallon of gas, yet go from zero to 60 in only 13 seconds. Featured were a modified Dubonnet-type suspension in front and a Columbia two-speed rear axle. This, in conjunction with the three-speed gearbox, provided six forward speeds with "nicely spaced ratios," Roadability was so good that a reporter could "read newsprint without the least effort while occupying the rear seat at 80 mph."

The Ford V8 engine of the Jensen was, of course, rather better than stock and boasted aluminum cylinder heads, magneto ignition, dual SU downdraft carburetors and two separate mufflers. The brakes were vacuum-servo-assisted with cast iron drums of large size, and center-lock wire wheels were used. The complete car weighed \$360 pounds

and the chassis cost \$2625. A sporty four-seater phaeton listed for \$3225, while the sedan was \$250 more. There was also a \$3825 drophead coupe built by Salmons & Sons, another well-known body firm.

Wrote the late Sir Malcolm Campbell, world's speed record holder, "I have nothing but praise for it. . . There is something about the car which is difficult to describe, something out of the ordinary . . . particularly noticeable to anyone like myself who is continually driving all kinds of different makes."

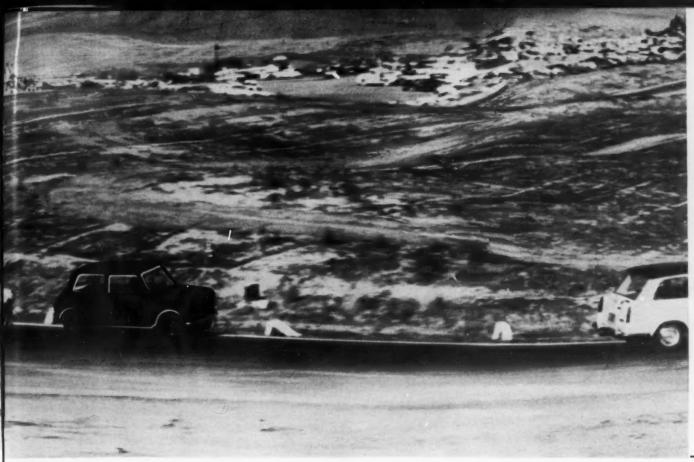
The 3½ liter Jensen was just the first step. The Jensen brothers did not plan to get rich on it. They had other ideas along the lines of commercial vehicles. During the association with Smith & Son, one of their jobs had been the building of an aluminum underframe for the British Bedford truck chassis. Reynolds Tube Company, the suppliers, already had suggested that a complete chassis could safely be built from aluminum tubing. This was the kind of challenge that appealed to the Jensens. The prototype, completed in 1937, not only was the first truck of its kind in the world, but also offered the largest loading space of any commercial vehicle (Continued on page 74)



DUEL IN THE DESERT

Racing thrills and fine points of handling are not the exclusive property of "purebred" competition machinery. This photomontage, by Gordon Chittenden, is comprised of eight successive photos snapped on





Turn Seven at Riverside during the production car race last November. To heighten the realism we suggest you cut out both photo strips and paste the left edge of the lower one to the right edge of the upper.

Viewing it from a swivel chair may help a bit too! There's no doubt the 850 of George Beavis is puiling away cleanly from its A-40 predecessor driven by Paul Cunningham. But the reason why it's doing so should stimulate bench racers. Is it due to better handling with the 850's front-wheel drive, superior skill on the part of its driver, or is he just lucky? Next time you go to the races watch for action like this.



INDY'S MISSING 86 INCHES

Indy's Golden Anniversary glittered with displays

• There are eighty-six cubic reasons why Jack Brabham didn't win the 1961 Indianapolis 500-Mile Race. Every one of them is related to the bore and stroke of the four-cylinder Coventry Climax engine. Fundamentally it was 169 cubic inches against 255, 1050 pounds dry against 1700. This combination was good enough to last all day and capture a spot "in the money", as they say at Indianapolis. But to stage a running duel with the likes of winner A. J. Foyt Jr., or second-place man Eddie Sachs, the 2.7-liter Cooper simply didn't have enough torque to get off the corners in traffic, or enough horsepower to run wheel-to-wheel down Indy's long straightsways.

wheel-to-wheel down Indy's long straightaways.

Brabham's ninth-place finish was a creditable performance by an even more creditable performer. No one who really knew his way around Indianapolis, including the Cooper team, expected him to run away and hide from the rest of the pack. Rather it was a let's-see-what-happens type of operation. And what they saw

pleased them much.

Brabham had average consistency for a qualifying run. His lap speeds were 145.278; 144.532; 144.998, and 145.773 mph. Total elapsed time was 4:08.03 which averages out to 145.144 mph, which was good enough to start him on the inside of the fifth row. There was considerable speculation about his driving pattern, particularly whether he would follow the path adopted by most Indianapolis drivers. In practice the World Champion often would come down the middle of the track, then square off the corners a bit. However, in qualifying and in the race he fell into the regular Indy groove, laying over toward the wall, swooping down to touch the white line in the middle of the corners, then drifting back out to be in position for the next turn.

One big difference did occur during the Cooper's fast qualifying run, and this was something not seen at the Speedway in almost 10 years (except for Jim Hurtubise last year)—the dirt-track technique. Brabham let the back end hang out in the corners so far that if he were in the same position with an American machine he would have lost it. But the little English job seemed to thrive on this sort of treatment, as the suspension worked up and down and the wheels slipped along over the asphalt,

never quite losing their bite.

The Aussie was officially credited with being in the first ten at 325 miles. He rode there through the 350 and 400-mile mark, then suddenly moved up to eighth at 425 miles and conceivably could have been as high as fifth or sixth if the crew had not outfumbled itself during the pit work. Brabham definitely was handicapped by his pit action, and the unfortunate part was that it was

unnecessary. He had everything going for him. A platform-type air jack which raised the complete car off the ground was used. Firestone, in a sportsmanlike gesture of good will, serviced his tires. And his fueling rig was comparable to any on the grounds. But in spite of this, the team set all sorts of records for leisurely stops.

Brabham's first time in on the 47th lap for four tires and fuel ate up 53 seconds. Then to prove to themselves they could really put their heart into it, the crew stretched out the next one at 112 laps to a minute and three seconds, all of which caused a competitor who was rooting for the Britishers to remark in strained anxiety, "What the hell are they doing out there, brewing tea?"

As was expected, the American machinery on its own home grounds dominated the event from the beginning. Foyt first asserted his command at 200 miles after the lead had passed successively through the hands of Jim Hurtubise in the Demler Special and Parnelli Jones in the Agajanian Willard Battery Special. Then except for short periods when Troy Ruttman's front-engined Zink Special and third-place Rodger Ward's Sun City Special were out in front, he and Sachs swapped the top spot back and forth so many times it became tiring to count.

The winner actually was decided on the 161st lap when Foyt made a 22-second stop for tires and what he thought

Thirty-three racing cars blare toward the first turn under the hot Hoosier sunshine as the 50th running of the 500 gets under way.



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of American trackmanship and British racecraft



Latest move of American speedway builders is to lay the faithful four on its side and far over to the left so that cam covers project.

would be fuel. The pressurized fueling system for his Bowes Seal Fast Special refused to work and he roared back out onto the track without a single gallon having been added to his supply. His lighter car naturally had superior acceleration, and he immediately took back the lead from the Dean Van Lines Special which was running with a full tank acquired on the 158th lap.

By the time the 184th turn popped up, Foyt's Meyer-Drake was running on fumes, and his fourth stop for fuel via the old-fashioned method let Sachs build up a huge lead. From all observations it was all over. But Dame Fortune must have nibbled a bit on A.J.'s ear, because the right rear tire on the Dean machine suddenly showed that tell-tale white line which says all that's left is air. To keep his fully-loaded car up with Foyt's virtually empty one, Sachs had to drive so hard he wore an excessive amount of rubber from his tires. Just three laps from the end he had to pull in. And the personable young man from Houston, Texas whistled past to become the winner of the Golden Anniversary 500.

Although it was not apparent from the results, a definite design trend is entering the Indy picture. This is the practice of leaning the Meyer-Drake out the left side of the automobile so the cam covers and portions of the

head extend beyond the frame rails. Prior to his death while test-hopping another car, Tony Bettenhausen had posted a practice lap at 149.2 mph in the Autolite Special which had a left-hanging engine. Tony was considered the logical contender to be the first man ever to circle the $2\frac{1}{2}$ miles at the magic figure of 150 mph.

This year saw some experimentation with power steering, but without favorable results. Smokey Yunick, chief mechanic on Jim Rathmann's Simoniz Special, Louis Meyer Jr., chief mechanic for Eddie Johnson's Robbins Special, and Ward's mechanic, A.J. Watson, all tried their hand at going the effortless-steering route. However, the control element is still outside the range of safety and all power units were removed from their respective cars. Essentially it seems to be a matter of feel and not a malfunction of the mechanism itself. Supposedly it was possible to vary the amount of assist by changing the valving, but experimentation never was carried to this point.

The Chevrolet contingent returned, all to no avail, as did the Novi which now bears the title of Paxton Products Special. The blown V8 is getting tired to the point where fuel leaked into the crankcase and exploded, leaving a trail of engine parts down the back chute.

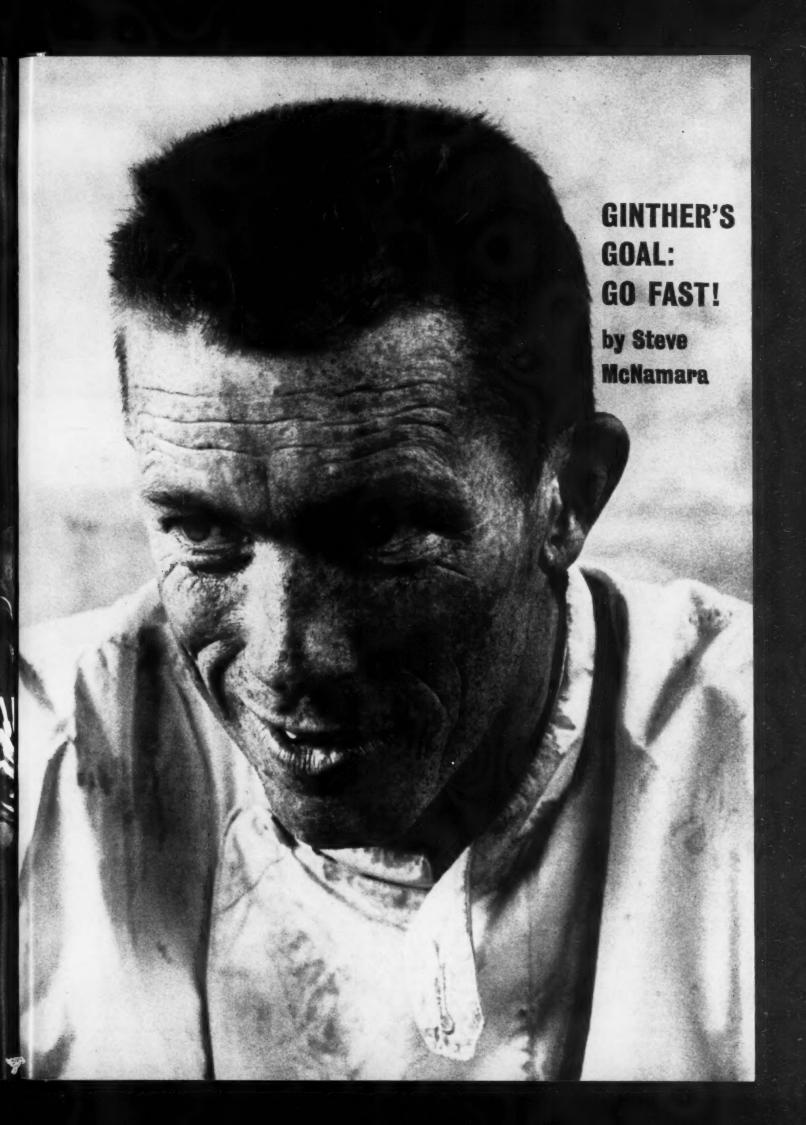
The Cooper has so influenced the thinking at Indy that some builders are talking about independent suspension and rear-engined chassis for next year, providing a suitable engine can be found. The weight of the Meyer-Drake definitely poses some problems. The highly-publicized Zink Trackburner was brought to the Speedway in an unfinished condition, and owner Jack Zink didn't even try to put the car in running shape. The engine in this chassis is mounted so far ahead of the rear axles that the driver is sitting in approximately the same location as the first Auto Unions. Much speculation has thus been raised about control.

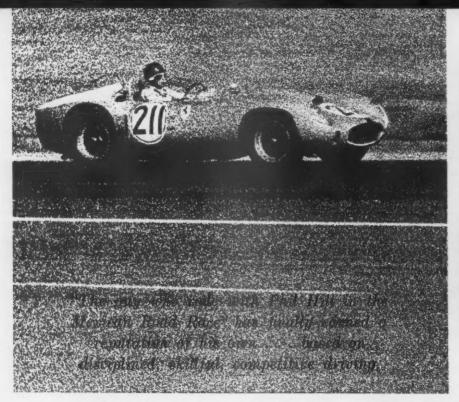
Reports filtering into Indianapolis are that other European constructors, particularly Ferrari and Maserati, had more than a passive interest in the Cooper's performance. They are now expected to lay plans to come to the 500 in 1962. Also, while it may be crassly commercial, total prize money now is up to \$400,000 and still rising. This, coupled with the fact that a market for imported racing cars will exist providing they can get the job done, will act as a strong lure in bringing Europe's top Grand Prix operations swarming into the Hoosier capital.

Indy of 1961 was a good show. If the '62 contest becomes truly an international one, they may put on a race you'll still be talking about to your grandchildren.

-GM









Ginther passed this pre-race check-up at a West Coast event. He says racing isn't as nerve-wracking as being a businessman was.

• Paul Richard Ginther took the rest cure. Tormented by the tensions of business life, he traded in his desk chair for a seat he finds much more soothing, a seat backed by the ear-splitting snarl of a Ferrari racing engine, facing the deadly curves of the world's racing circuits rushing up at astonishing speeds. Ginther made the switch in early 1960 and by the end of the season the change was big enough for a competitor to comment, "Calmer? He's acting so calm I think there's something phony about it." Not true, says Ginther. "I was at my wits' end before [as manager of Ferrari of California]. It was just over my head. Now I'm much more at peace with the world and with myself. I'm more relaxed because I enjoy what I'm doing. Why", he adds, a bit amazed himself, "I'm even getting to where I can be around people I don't like!"

There has been a change, but Richie Ginther en repose still resembles most people at full throttle. Like Phil Hill he's a short, wiry young man (5-5, 128, 31 years old) who travels on staccato bursts of nervous energy. Like Hill he has intense views on almost everything and argument is not invited. Although he's learning to suffer bores, attitudes that he considers frivolous still "really get my dandruff up." He's a perfectionist and a pessimist and his serious side outweighs the humorous. He doesn't go out of his way to be agreeable—a routine congratulatory "Nice race, Richie" won't do. He may have driven a poor race and won, or driven a superb race and finished third so anybody talking with him had better base his comments on the facts.

Like Hill, Ginther was raised in Santa Monica and has a Southern Californian's outdoors approach and absence of social pretension. Like Hill, Ginther is *sympatico* with Ferrari and its decidedly Italian way of doing things wherein individual brilliance and indifferent teamwork exert opposing forces on the firm's efforts.

Ginther is like Hill because the two have one of the closest professional relationships in the history of motor racing. Both are too acutely individualistic to brook an equally close personal relationship (Ginther's only really close friend is his wife, Jackie) but Ginther says, "My interest in racing stemmed from knowing Phil. Phil has always been instrumental in whatever I've done. If I hadn't met Phil I don't know what I'd be doing now. Maybe I'd be driving as fast as I could in a straight line on the salt flats or working in a gas station or digging ditches." Ginther, who for years was known as "The guy who rode with Phil Hill in the Mexican Road Races," not only acknowledges a great individual debt to Hill, he feels



The Californian and the Count. Richie and von Trips share an off moment from racing. Ginther has served as something of a catalyst in fusing the Ferrari scuderia's widely-diversified personalities.

all American drivers owe a share. "I'd love to be the first American World Champion," he says, "but, well, this is going to sound corny, but I'd love to see Phil World Champion. I think he deserves it. He's the one who pioneered it in Europe for us. Sure, there were some guys who fooled around at Le Mans but if it weren't for him most of us would still be reading about it."

Like Hill, Ginther should reap the benefits of Ferrari's reluctant junking of the loud red trucks and dazzling adaption of the lightweight, rear-engine principles pioneered by the British. As Dan Gurney remarked, "This year they've really got some bombs." They have the bombs, in great measure, because of Richie Ginther. Unlike Hill, and unlike the vast majority of front-rank drivers, Ginther is a first-rate mechanic with a great interest in the construction and testing of racing cars. "I really look forward to going out on a test," he says. "I enjoy doing a good job testing, when the only person out there is the engineer, as much as I enjoy doing a good job in a race when there are thousands of people."

Most factory driver contracts call for the employee both to race and to test but rare is the driver (Brabham a notable exception) who doesn't duck testing on every possible occasion. To them it's a non-paying waste of time offering still another chance to go on one's head. Ginther, almost immediately made chief Ferrari test driver, sees it differently: "Suppose we try something new and it works so we use it for a race. I know what it is and why it's there. For the other drivers it's just something new to get used to. That's the only training I do . . . test as much as possible. That's the only thing that does any good. Lifting bar bells doesn't have much to do with what you do when you drive."

Most factory drivers are allowed to duck testing because they're no good at it. Testing requires a different sort of skill from dicing through the bends. A good test driver's urge to go fast must be subordinated enough so that he can notice precisely what's going on within his mount; he must read dials correctly and remember what they said (most drivers are hopelessly innacurate) and he must know more than the fact the cogs and ratchets don't seem to be whirling about properly; he must have a good idea why they aren't. Ginther knows why the cogs are clunking and last season, while he lived literally across the road from the Ferrari factory in Maranello, he was of incalculable assistance in attacking the bugs inherent in a brand-new design. Furthermore Ginther, hardly known as a practitioner of the diplomatic arts, is helping iron out a feud of several years' standing within

Scuderia Ferrari. Tigers do not make good test drivers and Ginther is not a tiger. Confronted with this bald assertion he bridles. "I know I have the reputation of not wanting to dice it up and I don't think that's right," he fires back, then pauses. "Well . . . maybe it is right. Maybe I don't like to dice it up for mechanical reasons. It puts strains on your car that show up later. It lessens your chances of finishing. It's very important for me to finish the race. My whole feeling has been to finish rather than be a star for two hours and not arrive. I'd rather finish third in every race and third in Championship points than lead all the time and never finish. That's why I think the best driver in the world is Brabham. He starts and finishes a race and wins the World Championship. Starting and finishing is much more important than turning the fastest lap. There's no doubt that Stirling is the fastest. But Brabham just gets in, plugs along and by the end of the year he has the highest score."

Ginther's ears are tuned to his car's innards. He is quick to shut off completely if something sounds seriously amiss and he dislikes those drivers with less concern for their cars, and especially those drivers to whom motor racing is a convenient social prop. To Ginther motor racing is a serious business requiring attention and work.



Ginther is as dedicated to testing as he is to driving in actual races. Here at Modena, shortly before Monaco, he wrings out the new F.1 car. His background quickly made him Ferrari's chief tester.



As moderator in a minor dispute between Tavoni and Chiti, Richie does his best to be impartial without surrendering his convictions. "You've got to be diplomatic" dealing with internal frictions, he says.



At Sebring, buddies Phil Hill and Ginther grimace resignedly as Richie displays his blistered hands. Ginther says it was Hill who really taught him how to drive, freeing him from timeclocks.

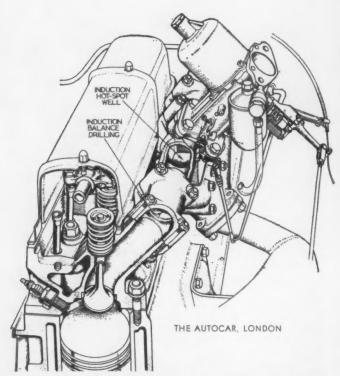
He's not "dedicated" to any lofty ideals embodied by the sport; it's his business because "It's one of the few lives of adventure left. Everybody wants adventure; some guys get it with girls or money or gambling. We're looking for a more adventurous way of life, like those Astronauts. For me driving is the most convenient adventure." Mike Hawthorn said there was no place in racing for a married man. Ginther, three years married, says acidly, "That's ridiculous. Are we freaks? We don't want to die, we want to stay alive, we expect to stay alive. We're normal human beings. Our odds of getting killed aren't as bad as those Astronauts. They're worse than some guy working at Douglas [aircraft] but a lot of those guys will spend their lives worrying about who's going to get their job and end up dead of a heart attack."

Ginther says this with almost a shudder, remembering that not too long ago he, too, punched a time clock at Douglas. But it was also Douglas, (Continued on page 66)

RUDDSPEED ACE

Ken Rudd, known to C/D readers for his 178-bhp Healeys, is still at it. Join Dennis May as he puts the latest Zephyr-engined Ace through its paces.

▶ It's uncommon for a new-model announcement to leak out in the preface to a Road Test, and that makes this one uncommon. As of now a third engine, Ford of Dagenham's 2553 cc Zephyr six, supplements the two powerplants that have hitherto monopolized A.C.'s range, viz, A.C.'s own all-aluminum unit with chain-driven s.o.h.c. and Bristol's iron alternative with pushrods and hemispherical heads. Both, of course, are 2-liter sixes, the basic design of the former dating, mirabile dictu, from 1920. This, in closer detail, is the picture.



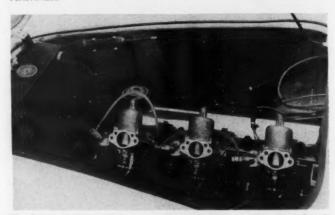
A highlight of the Ruddspeed Ace is the Raymond Mays aluminum cylinder head with its 45° intake ports for smooth gas flow. This is a 2-carb head.

The parent company, A.C. Cars Ltd., continues to market the 2-liter versions of the sports two-seater Ace and the hard-top coupe Aceca, though its primary preoccupation is now the Greyhound sedan, a hound of a rather different color that doesn't concern us here. The firm infusing the Ford strain is K. N. Rudd (Engineers) Ltd. of Worthing, Sussex, England, which, through its principal, former racing driver Ken Rudd, has had a long and successful association with A.C. It was Rudd who conceived the idea of dropping a Zephyr engine into the space between the Ace's fat tubular side members, and his company, with A.C.'s assent and cooperation, puts the plan into practice and retails the resulting automobile.

Known as the Ruddspeed Ace — or Aceca as the case may be — the newcomer is offered in a choice of tunes. The mildest, with a standard Zephyr ticker but improved exhaust manifolding, gives 90 bhp, twelve horse less than A.C.'s homemade 2 liter, albeit considerably more torque. Stage 2 includes modifications to Ford's original iron cylinder head,



BENJAFIELD



The 3-carb version tested ran out of marks on the speedometer before it ran out of power at about 130 mph. Traditional Ace handling remains good.

enlarged valves, double valve springs, triple SU sidedraft carburetors, special pistons, and develops 125 bhp. Stages 3, 4 and 5 all feature Raymond Mays aluminum alloy cylinder heads — more correctly but less familiarly known by the manufacturer's name, Rubery Owen — and have, respectively, twin SUs, triple SUs, and triple twin-throat Webers; outputs are 130 bhp (Stage 3), 150 (4), 170 (5). The sample tested was to specification 4. Owen-headed variants carry their carbs aslant — approximately 45 degrees of downdraft — give a 9 to one compression ratio and have lightweight pushrods.

Gearboxes in all cases are Moss four-speeders of the type fitted to A.C.-engined Aces, coupled (Continued on page 76)



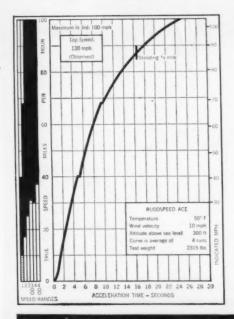
ROAD TEST: RUDDSPEED ACE

Price as tested:

Under negotiation

Producer:

K. N. Rudd (Engineers) Ltd. Worthing, Sussex England



ENGINE: (Ford Zephyr, Raymond Mays cylinder head)

NGINE: (Ford Zephyr, Raymond Maya cylinder head)
Displacement 155.8 cu in, 2553 cc
Dimensions Six cyl, 3.25 in bore, 3.12 in stroke
Valve gear: Pushrod-operated overhead valves, in line
but slightly inclined.
Compression ratio 9.0 to one
Power (SAE) 150 bhp @ 6000 rpm
Torque 154 lb-ft @ 3000 rpm
Usable range of engine speeds 1500-6000 rpm
Usable range of engine speeds 20.24 mpg
Mileage 20.24 mpg
Range on 16 gallon tank 320-384 miles

CHASSIS: (A.C. Ace)

 CHASSIS: (A.C. Ace)
 90 in

 Wheelbase
 90 in

 Tread
 50 in

 Length
 152 in

 Ground clearance
 5 in

 Suspension: F and R, ind., transverse leaf springs and lower wishbones.
 2

 Turns, lock to lock
 2

 Turning circle diameter between curbs:
 1

 Tires and rim size
 5.50 x 16 (both)

 Pressure recommended
 28 psi

 Brakes; type, swept area: F Girling disc, R drum;
 386 sq in.

 Curb weight (full tank)
 1964 lbs

 Percentage on driving wheels
 52%

 DRIVE TRAIN:

DRIVE TRAIN:

Gear Rev	Synchro?	Ratio 2.97	Step	Overall 11.55	Mph per 1000 rpm -6.8
1st	No	2.97		11.55	6.8
2nd	Yes	1.75	70% 45%	6.82	11.4
3rd	Yes	1.21	22%	4.69	16.7
3rd O	D Auto	0.99	-1%	3.84	20.2
4th	Yes	1.00	22%	3.90	20.1
4th O	D Auto	0.82	24.70	3.20	25.0
Final	Drive Ratio	s: 3.90	to one;	4.30 optio	nał.







FIAT 600D

The Italian's love for the automobile was never more evident than in this the latest variation on their bare basic means of transportation—the 600.

▶ One aspect of increasing prosperity in Europe is the modest horsepower race that is being run by the manufacturers of economy cars. Latest company to join the microscopic bhp battle is Fiat with its 600D model. A power increase of 7.5 horsepower from a bigger (34 cc) engine puts the new D model right in line with other minicars now spewing from continental assembly lines. Other new items can be quickly enumerated: twist-key starting, a new centrifugal oil filter, pivoting quarter windows on the doors, repositioned gas pedal, 18 louvers in the rear deck as opposed to 15, and self-parking windshield wipers. This sprinkling of changes would hardly seem to merit designation as a new type, but like any change in a simple, mass-produced tool they loom larger than life and consequently transform the 600 into the 600D.

Fiat fanciers may bridle a bit at our alluding to the 600 as a simple tool, but it must be admitted that for transporting four people it is a much less complex mechanism than, say, a Lincoln Continental. First introduced in 1955 at the Geneva Auto Show, the 600 had a hard row to hoe to gain the affection of Italy's discerning and hard-driving car owners. Designed to replace the immortal 500 "Topolino" (slang for Mickey Mouse), it was the first native-built rearengined car to appear on Italian roads. Dr. Dante Giacosa and his design team had a difficult time selling the-powersthat-be at Fiat on the merits of a rear engine and four-wheel independent suspension. Ride and handling of a small batch of hand-built examples of the 600 were such a step up from the "Topolino" (which was in its time - 1936 - head and shoulders above competitive small car designs), that the policy-makers were forced to give the program the green light.

Most important change wrought by the D model is of course the more powerful engine. The increase is derived simply from bigger dimensions of 62 mm bore by 63.5 mm stroke as opposed to 60 by 56 mm. Detail changes on the powerplant, over and above the increase in bore and stroke, include a new connecting rod whose bottom end splits at a 45-degree angle as opposed to the right-angle separation of the older one, and the centrifugal oil filter, which is driven off the rear of the three-bearing crankshaft. This last-named device cleverly centrifuges engine-destroying dirt out of the lubricating oil. It also provides an excuse to use the very

revvable engine's power: the faster you go, the cleaner the

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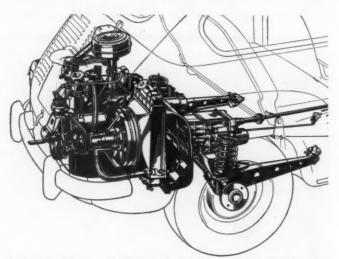
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What does this new, big engine do for the 600? The biggest improvement is in top-gear flexibility. In the older car a good deal of gearbox work was required to take advantage of any 10½-foot by 4½-foot holes that a Fiat forcer might spot in town traffic. The greater torque of the new engine permits acceleration from quite a low speed (12 mph) in fourth gear. Top speed is not greatly increased over the 632 cc-engined car. Our highest recorded velocity of 67 mph was only three miles an hour faster than that posted by the older model.

In all other driving departments, steering, brakes, gearbox, ride, and roadholding, the D can be graded like the 600 – from good to excellent. The steering transmits little or no road shock back to the driver. On the newer model, however, it seems much slower, although there has been no change in the steering gearbox or linkage. A personal aside in this area:



Reshaped carburetor air filter and ribbed "whirling" oil filter fitted to the rear of the crankshaft are external differences of 32 bhp engine.

the two-spoke steering wheel is a little disturbing with the spokes seeming to fall just where we like to place our hands.

The brakes, 71/4-inch finned aluminum drums with Fiat-Baldwin hydraulics, are more than equal to any speed the car can develop. As a matter of interest they are about the same size as those used on the Austin-Healey Sprite, which is a faster car by some 12 mph. Pedal pressures are very light, which may contribute to a lack of feel while braking so that there is a tendency to lock the rear wheels on less than emergency stops. On the credit side, however, there was never any indication of fade, or pulling to the right or left.

Another good feature of the Fiat-Baldwin system is that in the event of a broken hose or wheel cylinder only one set of wheels will be affected. The other two will retain full

braking efficiency.

The gearbox is excellent as would be expected in a car meant to be driven by a population of frustrated Grand Prix drivers. The shift pattern is distinguished by short throws without the slop or play usually associated with rear-engined cars. The whole device, including the short, stiff shift lever, has a pleasant machine-made feel that invites use. This is probably not unintentional on the part of the designers for enthusiast-like use of the gears is necessary under certain road and traffic conditions.

With one up over washboard surfaces, the car is a little like a small boat in a confused sea. With two or three on board the suspension settles down and does a more than commendable job. It must be admitted that a lightly-laden 600, unlike the pre-war "Topolino", does not have to be aimed to avoid bad surfaces even though it makes their

presence under-wheel known to the driver.

Roadholding is dependent upon the driver. Little old ladies going to church would not be aware which end of the 600 totes the most weight. A commuter trying to beat his train to the station in the morning might realize - if he were awake - that the more he pushed on the go pedal the less he had to turn the steering wheel to negotiate a given corner. A knowledgeable enthusiast would have a ball without (barring stupidity) having to look up his Blue Cross

Where the 600 scores over its competitors is in quality of fit and finish and in the use of thoughtful little extras. The bodywork is good; pieces meant to fit together do. The car is watertight, and interior trim and upholstery appear to be hard-wearing without looking like they were left over from the tractor or truck assembly line. There is a turn signal that winks and clicks to be turned off, a manually-operated windshield washer that floods the screen, a door-operated courtesy light that includes an interior switch, and a 10-item tool roll. Instruments - three lights for oil pressure, water temperature, battery charge, and two needles for speed and gasoline quantity - are housed in a little hooded binnacle in



The old adage of two's company and three's a crowd definitely holds true when the 600D's rear seat is folded to form giant touring luggage locker.

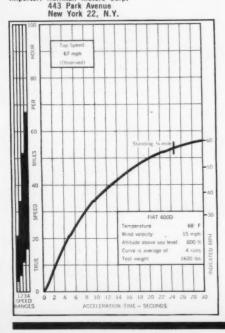
front of the driver, plus two lights alongside for high beams and parking lights.

Not all is bright and fine with the 600D, however. The seats are not really comfortable for six-footers, although the fore and aft adjustment is adequate. Whether increasing the cushion size (now 17 by 18 inches) is the answer would be hard to say. There seems to be room for completely redesigned seats in the car, which would solve the problem. The 600D is one of two remaining production cars that still use rear-hinged doors. Although they ease the entry and exit problem in a two-door vehicle they are not good from a safety standpoint. The well-made and positive-acting Fiat door locks do much to obviate the problem, but do not solve it completely.

Complaints aside, the 600 series will occupy a large niche in automotive histories of the future. It easily joins that long list of cars that we would like to own for as long as elbow grease and rust preventatives would allow. -C/D

ROAD TEST: FIAT 600D

Price as tested: \$1249 POE New York Importer: Hoffman Motors Corp.



Displacement
Dimensions Four cyl, 2.44 in bore, 2.50 in stroke
Valve gear Pushrods, overhead valves in line
Compression ratio
Power (SAE)
Torque
Usable range of engine speeds 1100-5500 rpm
Corrected piston speed @ 4800 rpm1980 fpm
Fuel recommended Regular
Mileage 31-40 mpg
Range on 7.13 gallon tank220-285 miles

CHASSIS:

Wheelbase	78.75	in
Tread F 45.3 in, R	45.7	in
Length	129.7	în
Ground clearance	6.2	in
Suspension: F, ind., transverse leaf spring	g. upp	per
wishbone: R. ind., coil, swept wishbone, sw	ing ax	le.
Turns, lock to lock	3	1/4
Turning circle diameter between curbs		
Tire and rim size5.20 x 12, 3	11/2 X	12
Pressures recommended	R 23	psi
Brakes; type, swept area 71/4 in drums, 1	08 sq	in
Curb weight (full tank)	1320	lbs
Percentage on driving wheels		

DRIVE TRAIN:

Gear	Synchro?	Ratio	Step	Overall	Mph per 1000 rpm
Rev	No	4.28		20.84	-3.0
1st	No	3.39	660/	16.50	3.8
2nd	Yes	2.06	65%	10.02	6.2
3rd	Yes	1.33	55% 48%	6.50	9.5
4th	Yes	0.90	40%	4.37	14.2
Final	Drive Ratio:	4.875	to one		







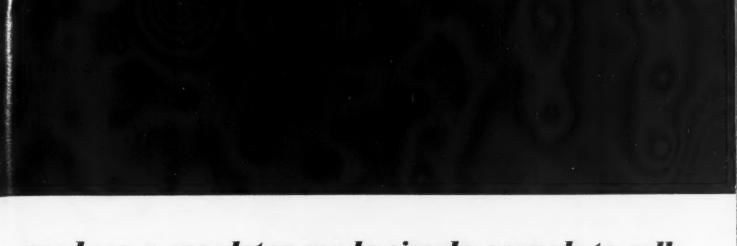
by Griff Borgeson · Builders Troutman and Barnes

• On June 5, 1961 a small, silver, aerodynamically-smooth sports car, ignition off, whistled into the pits at Riverside International Raceway. The men in the pits, normally dead-pan, were grinning euphorically. The long, lean, young driver hoisted his frame from the cockpit, sat on the roll bar, pulled the goggles from his grimy face and drawled, "What's funny?"

His team mates told him, "Man, you turned a 2:03! You're close to Gurney's lap record with the Lotus 19. How hard were you on it?" Then Jim Hall's face lit up too.

He had not been on it remotely hard. It was just his second time out with the brand-

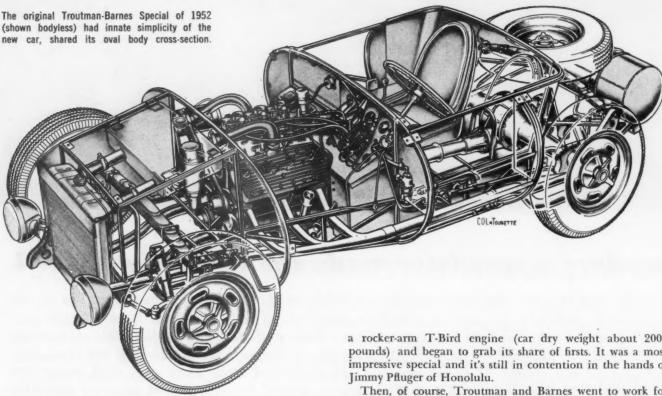




produce a speedster made simple enough to sell.

new car and the first day had been devoted solely to the dull task of putting miles on the mechanism, pulling a tall gear as a built-in governor. This Monday the tyrants in the pits finally decided that the time had come to gear down and start giving the little charger its head. Hall had brought the new car along slowly on the unforgiving circuit, but that easy, loping 2:03 lap spelled 24-karat pay-dirt. It confirmed once more the sixth sense for speed that Dick Troutman and Tom Barnes have proved before. And it justified the faith that their patron and partner Jim Hall had placed in them almost six months before.





AN AUTOMOBILE IS BORN

It was on November 19, 1960 and in the very same pit area that Hall had bumped into Troutman and Barnes as they were eyeballing the F.1 Lotus. Conversation developed around the construction of a series-built American sports car that could compete in price and performance with the world's best. The three taciturn men liked and respected each other. Texas oil producer Hall, who had listened much and said little, returned home, thinking it all over. Then from Midland, Texas he called Culver City, California and said, "I think that your ideas are right. I'll underwrite development of the first prototype and buy it. Then we can go ahead and sell cars. Are we in business?"

"You can count on it," said Troutman and Barnes, for whom this support was life's blood for what they knew they could produce.

They respected Hall for his own healthy conservatism and for his way of getting things done. His performance in the Riverside U.S. G.P. was a good example. He had qualified between Phil Hill in a Cooper and Graham Hill in a B.R.M., which is moving in good company. But what was impressive was how he had achieved this. Hall had bought his Lotus as a Formula 2 car. He'd taken an engine from a Cooper and had reworked the parts at his disposal to emerge with a legitimate Formula 1 car. Having sold an F.1 car only to Moss, the Lotus team arrived at Riverdale bewildered as to how this kid from Texas could have come up with all their goodies. But not only did he have these, he was running fifth at the end of the race, in all that rapid company. Hall lost his rear end on the last lap, which cost him two positions, but the race established him as a force to reckon

MOST EXPERIENCED BUILDERS

Hall had ample reason to respect Troutman and Barnes. They had worked for Kurtis-Kraft for about ten years building oval-track race cars. About the end of 1951 they built the memorable Troutman-Barnes Special. Powered by a Merc flathead engine this machine was the terror of thoroughbreds on the West Coast for years, with driver Chuck Daigh taking no end of seconds and less at its wheel. Then it got

a rocker-arm T-Bird engine (car dry weight about 2000 pounds) and began to grab its share of firsts. It was a most impressive special and it's still in contention in the hands of

Then, of course, Troutman and Barnes went to work for Reventlow at the beginning of the Scarab project. The machines they built for Lance still are legendary and very hard to beat. As the RAI F.1 effort became more meditatively long-range they split to re-establish their own firm, and the Chaparral is the result. It is not a special; the company will build as many as are spoken for.

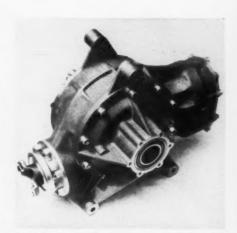
The name Chaparral is appropriate, geographically and symbolically. Throughout the southwest generally it refers to a variety of thorny shrub but in Texas and New Mexico -Hall's stomping ground - it's the name for the Road Runner, a saucy little bird that kills rattlesnakes and can skitter across country, on foot, at speeds up to about 60 mph. It's brave, clever and very fast.

PRICE AND DESIGN TARGETS

Troutman and Barnes have been convinced for years that Americans can match Europeans in building road racing machinery. One deterrent has been the high cost of manufacture here. However, now that the world's top cars - such as Lotus 19 and Cooper Monaco - have become as costly as they have, it now is possible for Americans to compete with them on a price basis. Another deterrent is the fact that we must work with heavy, mass-produced engines. However the Chev V8 has adequate power output and its relatively low price can help to keep the cost of the total vehicle on a competitive level. Since we are limited to a cast iron engine it becomes essential to save weight wherever else possible on the vehicle. The builders felt that Detroit's massproduced aluminum engines were still too unproved to merit serious consideration for racing; the future will take care of itself.

After careful study of the problem Troutman and Barnes decided that they could produce a 1500-pound car that would be a match for Europe's best both in price and performance. For their prototype they chose a 318-cubic-inch Chev in a very mild stage of racing tune: 11.5 to one compression ratio, experimental Iskenderian roller tappet cam and Edelbrock three-carb manifold. They placed emphasis on reliability rather than high specific output, for the prototype stage at least. And if the hoped-for low total weight could be achieved an output of slightly over one bhp per cubic inch might be entirely adequate. (Continued overleaf)

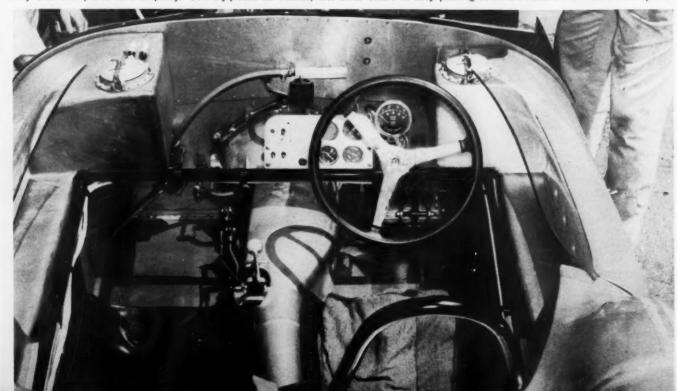
Jim Hall considers and Dick Troutman observes as Tom Barnes makes an adjustment during the second Riverside outing of prototype Chaparral.



Special side cover plates were cast to allow inboard rear brakes and permit sprung chassis mounting of the Halibrand final drive assembly.



Tiny dash exemplifies car's simplicity. Centrally-placed for balance, fuel tanks double as body paneling below the doors on both sides of Chaparral.



Because of the emphasis on low weight few mass-production components could be used. Exceptions to this are the Corvette aluminum-housing four-speed gearbox and aluminum radiator. The latter, which can be bought right over the counter, saves a thumping 15 pounds. But most components had to be designed and fabricated from scratch. By foregoing conventional knock-off hubs and designing their own wheel-stud hubs the team was able to reduce the weight by about 3.5 pounds per wheel.

SIMPLE ALL-INDEPENDENCE

The lattice frame is built entirely of chrome-moly; its main tubes are 1.25 inch in diameter with 0.058 wall thickness. The firewall is 0.25-inch magnesium sheet. Front suspension is by unequal-length wishbones working against Monroe Load Leveler telescopic-shock and coil-spring units with special coils wound to provide a rate appropriate to the weight of the vehicle. Rear suspension uses similar spring-shock units. It is fully independent by means of two U-joints per side, a wishbone at the bottom, single link at the top and two leading radius rods. The brakes are Girling discs, mounted inboard at the rear on special side-plates designed by T-B for the Halibrand quick-change center section. Steering is modified Triumph Herald rack and pinion, which is lighter than the ubiquitous Morris Minor assembly.

Simplicity, of course, is an engineering ideal and always has typified good American race car practice. The Chaparral's suspension system shares this quality while being fully adjustable for camber and toe-in at the rear and for these, plus caster, at the front. Roll center can be manipulated quickly to suit courses and driver preferences. In fact, there's hardly anything on the car that can't be reached and adjusted or changed within five minutes. The front and rear halves of the handsome, T-B-designed body are hinged. They can be lifted from the car just by removing the hinge pins, a much quicker procedure than when Dzus fasteners are used.

FEELS SMALL, RUNS BIG

The team was frankly apprehensive during the shakedown runs at Riverside. Although the completed prototype, with 13 quarts of oil, weighed out at 1479 pounds with perfect 50-50 weight distribution, they were worried that the front end might be too heavy; also that they might have difficulty in getting forward traction.

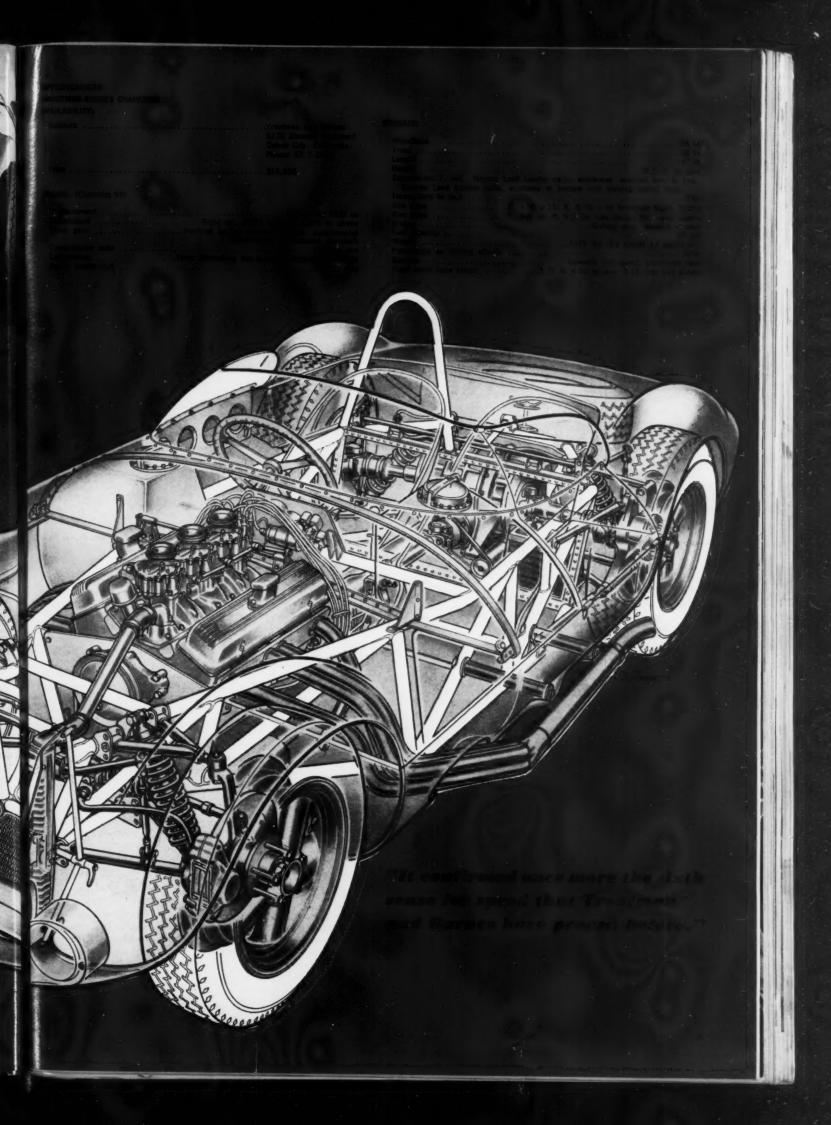
These worries proved to be unfounded, to the delighted surprise of all concerned. Says Jim Hall, "It gets tremendous rear wheel adhesion; you can hardly make it spin its wheels. It has a very low polar moment and is extremely light on its feet. It has the feel of a little, light car as opposed to one with a big cast iron engine. But when you get moving down the chute it comes on like a big car. It's easy to drive, easy to correct, has no vices.

"It understeers a little. In any turn, including fast Turn 9, you have plenty of power to put the tail anywhere you want it; you can get it out and hold it there with power. On the slower turns I could hang the tail out as far as I wanted and maintain good control; it doesn't break away in the esses at all. Rear end response to the throttle is excellent.

"I like a little familiarity with a car before I get on it all the way. With this engine we should get our Riverside lap times down very close to two minutes flat and with a more exotic engine the car should be *very* fast."

At Laguna Seca the following weekend it was fast enough to take second behind Chuck Sargent's Birdcage in spite of an engine ill with three broken rocker studs. Based on this instant success the builders are making three more cars at once, while Hall will race the prototype whenever and wherever he can. Say Troutman and Barnes, "Honestly, we're tickled to death; everything is lovely. Have product; will sell."







ROAD RESEARCH REPORT: VOLVO P 1800

Continued from page 34

and suspension gives the driver a distinct feeling of being able to cope with almost any situation. The power is there too, if it is used properly, but don't plan on trying broadsides or breaking the rear end loose. The P 1800 has definite understeer in all corners from "just rolling" types through those on the ragged edge, and the rear end stays put. In a sweeper, once the front end breaks loose - although, admittedly, this happens at very high speeds, much higher than anyone should ever encounter on the highway - it doesn't seem to matter where the front wheels are pointed. Attempting high speed in very tight corners, rather than finding the rear end breaking away. the inside tire will lift and, of course, spin. With no power reaching the wheel still in contact with the pavement, the car slows down. Throughout the rest of the cornering spectrum, the P 1800 is a pure delight.

The steering, which has a slightly heavy feel at parking speeds, becomes light and precise as speed increases and the self-centering action promotes driver ease. The P 1800 is a very easy car to drive; the panoramic vision and the four-square feeling of the wheels enable the drive to place it accurately in a corner, Feathering the throttle slightly brings it through swiftly, surely and controllably. It's a fast way to travel and the overdrive keeps revs respectively low. While top speed is about 105 mph, the car's not meant for all-out velocity but is right at home at any speed below the century mark and will stay there for hours.

EXCELLENT CONSTRUCTION

One tester commented the P 1800 is "the best car the Jensen brothers ever made.' Admittedly partial toward German automobiles, he said it was "too bad" the German firm of Karmann did not undertake body fabrication for the new coupes. More objective minds prevailed and it was agreed there was little - very little - to criticize about the way the P 1800 was built. The few things that were noticed should be corrected under quality control or, perhaps, changed production specifications. We found two small spots on the edge of the molding where the chrome was thin. The rest was flawless and the paint was among the best we've seen, completely free from orange peel or thin spots, just an even bright red. Body panels were ripple-free and the fit was perfect. Even in the engine compartment the welds were neat and clean and paint over primer covered all the visible (and, we are assured, invisible) metal. Underneath it all, heavy undercoating helps blanket road noises.

The hood was undercoated with fiber-glass, covered by a smooth plastic sheeting. Rubber matting helped deaden trunk noises, but it could have been and apparently has been made better. The trunk-mounted spare has a plastic cover to keep luggage clean. Drain tubes are built into the trunk rim and the cowl vent, but we found that some rain leaked in through both areas. In addition, there was slight

leakage around the leading edge of the driver's door.

The interior workmanship was as good as any contemporary car. Some testers felt the plastic cloth seats could have been finished a little neater and some felt a firmer lateral edge would have been desirable. The wear surfaces on the front floor are rubber-covered for cleaning ease and durability, but attractive carpeting is used on the drive-shaft tunnel and rear seat floor. There is no glove compartment, though two deep wells on the cowl will hold several pairs of gloves plus lots of other small items.

DETAILED DIAL DEPARTMENT

The instrument panel is quite attractive, but caused some comments. There was not 100 percent approval of the styling of the dial faces. To some they appeared to have what has unfortunately come to be known as an American look (Studebaker Hawk excepted). They are lavishly styled but not altogether functional for split-second reading. They have deep shields, but still shine on the sharply raked windshield at night. Fortunately they are still sufficiently legible when the rheostat switch is dimmed. They are not fully marked, chrome bumps serving instead of figures for some numbers. The oil pressure gauge in the center of the dashboard is difficult to read. The thermometer-like water temperature gauge, though mounted right in front of the driver is hard to read at night since its blue indicator doesn't show up. The oil temp unit below it is fine with its yellow

There were other things that didn't quite sit right with us, although we might stress that we did like the car very much and these comments are as much personal opinion as much as they are, perhaps. caviling. These included the placement of the wiper switch next to the headlight switch. Once in the drizzling dusk we were plunged into darkness when we pressed the wrong knob. It was interesting, though, to find that the wipers are Autolite units made in the United States. They worked well with a thorough sweep and the washer operated by turning the knob to the right. It was a German SWF washer with a small centrifugal pump that shot a steady stream.

The overdrive toggle was not particularly convenient to the steering wheel rim. If we were asked to redesign the dashboard layout, here's what we'd do: locate the overdrive toggle in the position of the heater switch, then the heater switch could go next to the wiper switch while the light switch could go to the right of the overdrive. The overdrive control could also be mounted on the steering column in place of the loud-horn lever. We weren't able to discern a significant difference in volume between this and the regular button.

SPACIOUS SURROUNDINGS

Items on the plus side were numerous but they seemed so natural they are easy to overlook. There was more than enough legroom for both driver and passenger, although Reutter-type reclining seats might be a nice option. The solid foot rest for the driver's left leg is a welcome addition and the shift lever falls easily to hand. The ash tray is big and handy and the standard-equipment shoulder harness/seat belt is a worthwhile addition, although the top fix-

ing point might have been a bit higher, as on the sedans, to minimize the chances of the wearer slipping out of it.

A large opening behind the rear seat, resembling the one on the Corvair Monza, will take several small parcels. The front seats are adjustable over a limited range for rake and the jump seats in the rear will accommodate two children. An adult will fit there transversely but headroom is lacking. The heater and defroster should handle their tasks ably, based on the brief use we gave them. Ventilation is good, although some heat radiates from the transmission.

UNITED NATIONS OF COMPONENTS

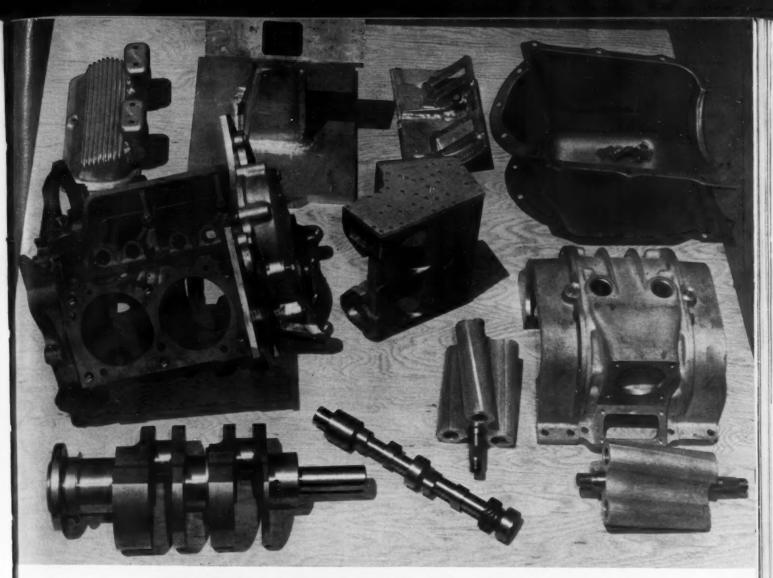
With the P 1800, Volvo continues its policy of "hands across the sea" when it comes to buying components. In addition to the fact that the prototype was built in Italy and that present cars are put together by Jensen Motors in Scotland, using a shell made by Pressed Steel, Ltd., there are numerous other non-Swedish components. We mentioned that Italian Pirelli Cinturato tires are standard. All the instruments are English, by Smiths. The battery is from Lucas who also provides most of the electrical circuitry. The carburetors are by SU, the overdrive by Laycock de Normanville and the brakes by Girling. The steering gear is German, made by ZF, the windshield washer is by SWF, while the ignition and spark plugs are Bosch. The fuel pump and air cleaners are apparently American (or made in England under license) AC units while the wiper motor is Autolite. Volvo's own (and very fine) transmission, rear end and of course engine are used. About the only other item immediately recognizable as being Swedish is the shoulder harness and seat belt.

This buying from everywhere doesn't indicate a scatterbrained purchasing agent, but reflects sharp corporate policy designed and practiced to give Volvo and its customers the best components for the job at the lowest unit cost. The English business magazine, THE ECONOMIST, commented, "Being one of Volvo's 700 or so suppliers does not buy a ticket to la dolce vita; it is a painful, humiliating, shocking, disciplinary but, in the end, no doubt healthy experience." Actually Volvo has little choice but to buy its parts abroad, the proprietary industry in Sweden being next to nonexistent. Yet since it has a free field in which to roam, it can be ruthless in demanding quality and competitive prices.

PRICE IS RIGHT TOO

Proof of the success of this policy is the fact that when the P 1800 was first revealed, the price was proposed to be "under \$3800." Now that it's actually possible to buy one, that's the price you pay. Can you think of many other cars that have actually come in at their projected prices, with all normally "optional" equipment?

From our perspective the P 1800 seems to have all the makings of a winner. From its attractive egg-crate grille to its kicked-up rear fenders, it looks trim and fast, promising—and delivering—performance. Its first-time drivers will be confident and at ease and advanced types won't be disappointed. In a nutshell, it's yare. At its listed price, it has no real competition; it's low enough to lure buyers of both less expensive machines and ones that cost more. And if they ever make a roadster—wow! —C/D



TEMPEST TWIN

Speed wizard Mickey Thompson saws not a lady but an engine in half.

Anyone who thinks the Europeans have a monopoly on high-performance, small-displacement engines had better stay away from Mickey Thompson Enterprises in Long Beach. California, where a typical conversation between Mickey and his crew might sound something like this: MICKEY: Men, we need a 90-cubic-inch Pontiac engine that will break every International Class F record. FIRST CREW MEMBER: Coming right up. (Sounds of band saw and cutting torch as Tempest four is cut in half.) SECOND C. M.: What do I do with the left-oyer half? MICKEY: Save it. We can cut it in half in case we ever need two one-cylinder engines.

The execution isn't quite that simple, of course, but the concept is. The accompanying photo shows all the major components (except rods and pistons) needed to bolt together a supercharged 90-inch engine intended to be a record-smasher. Mickey's plan was to put the engine into a lightweight dragster chassis and journey to March A.F.B. early in July where he would temporarily displace jet bombers while he tried to capture the standing kilometer and mile records. (Additionaly, he intended to have several other engines for a full day of record-breaking in several classes.) In August, with the engine in the Bill Burke streamliner shell for Bonneville, an attempt will be made on the flying records for the class. It will be necessary for the two-banger to hustle right along in any case. The standing kilometer record average is 89.7 mph, set by Maserati in 1937. The

mile speed, also Maserati, is 104.9. In the flying distance categories we refer to the streamlined MG which, in 1957, rolled two ways along the salt, averaging 245.11 mph for the flying mile and 245.64 for the kilometer.

How does one go about slicing a Tempest in half? Just cut the block and head exactly as shown. The block ends up about 161/2 inches long, and it and the head are sealed off with 3/8-inch aluminum plate, plenty of Permatex and numerous Allen screws. The billet crank has been destroked 1/4-inch to 31/2 to bring displacement just below 90 cubic inches. Bore remains stock -4 1/16 inches. Mickey is now in the camgrinding business and is able to supply his own needs. Forged rods and pistons are also from Mickey Thompson Enterprises. Compression will be about 7 to one.

The supercharger is the GMC 2-71, a little-known series designed for stationary engines. It will be pumping around 20-25 psi boost. Extremely light, it offers unusual possibilities for other applications if it is successful here.

Fuel will be alcohol (or possibly a blend) from which Thompson's engine experts anticipate in the neighborhood of 250 bhp at as-yet-unannounced revs.

Will it work, not to mention break the existing records? Thompson doesn't know, but if he didn't think it had a chance he wouldn't be building it. As he says, "Half the fun of this business is trying something new – just to see if it's possible."

—Wayne Thoms



BEAUTIFUL BRUTE Part 2

by Bill Carroll

When the Chrysler 300 was born, of varied racing experience and enthusiasm in the front office, it soon became an American performance symbol and a feared and respected competitor on the stock car circuits.

▶ Fifteen minutes after top-level approval was given, Bob Rodger had zipped halfway across Detroit to offices of Cliff Voss, at that time in charge of Chrysler-Imperial design studios. Bob charged into the studio, cornered Cliff and said, "What would you do if we could sell a car like this?" In fifteen minutes, with innumerable sheets of paper, Bob Rodger sold Cliff Voss the concept of a highly personalized car that would outperform everything on the road, a car that Bob wanted to up-grade and up-price into a quality market interested in performance and good design.

Cliff says, "We talked awhile, then hurried down to check

clay room bucks of 1955 models and envision a composite from the best of 1955 treatments. Later I went back to the studio and called my five stylists off the drawing board. We filled the coffee cups and began a three-hour bull session which resulted in rough pencil sketches shown to Bob a couple days later. By now our director of styling, Virgil Exner, was in on the project, and suggested we eliminate all possible chrome trim to make the car distinctive."

From Cliff Voss's point of view, Chrysler's basic problem with the original 300 was to achieve a design that would both appeal to the purist school and be sufficiently exclusive to

achieve a prestige image. Virgil Exner considered it unnecessary to spend money for new tooling when they already had many good things available.

In retrospect, it seems clear the 300 was built for a "blood and guts" market. It is also known that more practical considerations forced mixture of parts from two Chrysler cars to make a 300. They were: timing of production; need to introduce a car in the middle of a model year, and most importantly a new model that could be built at an absolute minimum tooling cost. There just wasn't enough extra money in the 1955 Chrysler budget for another car.

To reduce the cost of Rodger's proposed model stylists limited their work to combinations of existing cars, which, as history shows, turned out to be mounting the gutty Imperial grille in a New Yorker body. Stylists on the original project say there never was a full-size clay model of the 300. Rather, bits and pieces of trim and design material were applied on existing 1955 prototypes to style Rodger's idea at lowest cost.

Bob Rodger determined that by adding a second four-barrel carburetor and a special cam with 60 degrees of overlap, they could jump the 1954 Fire-Power V8 from 245 to 300 bhp. Accordingly, the new model was soon called the Chrysler 300. Black and white checks, associated with Cunningham's racing, were selected to tie the 300 to a high-performance image. The hood nose plaque, which required strong identity, proved a difficult aspect of 300 development. Stylists wanted it to go with the divided grill from the Imperial, yet not to be too heavy or bulky. Walls of Cliff's studio were soon filled with sketches of various 300 identification medallions. Finally they were balloted to a few, carefully drawn, then cut from cardboard. These semi-final sketches were then stuck on clay models of 1955 Chryslers so a final selection could be made. At this stage of development the 300 was nearly six months behind pre-production schedules for standard 1955 models.

According to a Chrysler executive who was in the Jefferson plant in 1954, because the corporation wanted the 300 introduced in the middle of the 1955 model year, it could not be changed so drastically that they couldn't build it quickly. To be sure it could be built, they pushed a sample white 300 New Yorker hybrid hard-top down the Imperial assembly line in October of 1954. The 300 horsepower engine was added "off-line" and a week spent soldering New Yorker body holes they didn't want. Fitting front fenders and hood was tricky: "We had to do a lot of barbering to adapt the Imperial grille frame to the New Yorker sheet metal. The Imperial front bumper, parking lights and wire wheels were on this first car. Rear quarter molding came from a Windsor, because it was less cluttered than anything else available."

Though Detroit is considered blasé about cars, a new model is followed closely as it proceeds through the plant. At quitting time, production workers swarmed around this sample Chrysler 300 so that specialists putting final touches on the uncompleted car were forced to rope off a twenty-by thirty-foot bay in which to continue working.

The first 300 was completed minus nameplates or medallions. Bob Rodger (Engineering), Cliff Voss (Styling), and Tom Poirier (Production) met at the Jefferson Street plant one day with a box of chrome-plated bronze medallions and name plates. They held and taped them all over the car until they agreed on the most attractive place for each. A workman then drilled holes and bolted the trim in place. Measurements taken from this first 300 were noted on drawings so locating holes could be properly pre-drilled in subsequent C-300s.

Finally, the sample Chrysler 300 was finished and driven to the executive parking area. Ed Quinn, manager of the Chrysler Division, and Bill Braden, General Sales Manager, came down from "management row". They stood and talked, then walked around their unusual baby trying to estimate sales potential. And talked some more. This first car was



Chrysler-Imperial Styling Studio experimented with different themes for the 300, as these original renderings show. Design above, with strong horizontal-bar grille, also featured a distinctive rear fender contour.



rough — not from a styling or finish standpoint, but in its evasion of standards established for a Chrysler. Suspension was rock firm. Exhaust noise and solid lifters made it sound like a race car. The big question: "Is it too radical?" Finally Mr. Quinn stood back and said, "Maybe they'll like it." Then Bob Rodger took Braden and Quinn for an eye-opening ride in what was to become Chrysler's most desired car.

Chevrolet's Corvette and Ford's Thunderbird had begun to make a real splash in the automotive world. So Chrysler's need for a "sports car" benefited from the most powerful engine then on the road in Bob Rodger's brainchild. Enthusiastic support came first from Bill Braden, Chrysler Sales Manager, who wanted a sports model for his dealers. Engineers could also see the 300 as a useful test bed for experimental developments.

Cliff Voss recalls seeing this first 300 at the engineering gas pump. "You had to beat your way through a crowd just to get near it. And surprisingly enough this prototype was so well accepted by management that it emerged from production exactly as we had styled it."

According to Bob Rodger, the biggest problem in selling corporation management on the 300 project was getting key people to drive the car. But once they drove it they became enthusiastic boosters. "We weren't concerned with building a lot of these just because horsepower and performance were tops," says Bob. "We wanted the 300 performance image

around the entire Chrysler line." It took a month to convince company brass that a "hot" hard-top could create a product image and be profitable. Finally on November 1, 1954 Chrysler's 300 was officially listed on Automobile Manufacturer Association specifications as a part of the Chrysler line, though public announcement was delayed until January 17, 1955. (Records show 1,692 Chrysler 300's were sold during the 1955 model year.)

Tom Poirier, then a production executive in the Chrysler plant, had to make the 300 something that could be built on a production basis. He recently told CAR AND DRIVER: "Early 300s were assigned wire wheels on an option basis because we had a three-year supply left over from previous Imperials. Besides they looked better and kept the brakes cooler. To make the car roadable we went to heavy-duty springs and shock absorbers. The C-300 had Imperial front suspension and brakes, with nylon six-ply racing tires on wide-base wheels. Assembly was so far ahead of components that some early 300s were built with chromed bronze medallions fitted by appearance, rather than to pre-drilled holes."

Production 1955 Chrysler 300s (then called the C-300) used a New Yorker body with Imperial grille. Chrysler bumpers and bumper guards were mounted front and rear. The instrument panel was from the Imperial while interior trim was buff-colored natural leather. A two-speed Imperial Power-Flite transmission was used for early 300s, but Torque-Flites became standard as soon as they were available. Some 300s had the extra-cost Imperial wire wheels, though most were built with steel wheels. Special hub caps had a checkered-flag center.

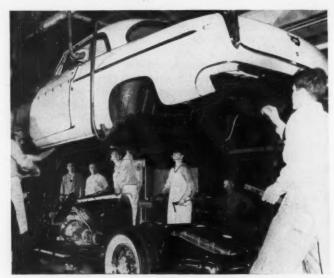
Snow blanketed Detroit when the first production C-300, a white coupe, came off the line in January of 1955. The next run was ten red coupes for announcement showing. Bob Rodger recalls, "I got a real thrill standing at the window and looking over the ten. They looked like little red Ferraris, poised among the taller production coupes."

Two red coupes were promptly requisitioned by Chrysler's proving grounds in Chelsea, Michigan. Here, in 3800 acres of fields, woods, and lakes, is one of the most comprehensive passenger car proving grounds in the world. The 300s went on a 24-hour endurance program which included racing around the 4.7-mile oval track which has return curves at each end for speeds of 180 mph. Published reports indicate that prototype Chrysler 300s ran well over 140 mph. The camshaft of early 300s is said to be the same grind used by Cunningham at Le Mans in 1954. (Mr. Cunningham recently told CAR AND DRIVER, "We asked Chrysler for help with our Le Mans cars. They did a lot of engine dynamometer work for us which showed up later in production cars. Heads and manifolding we used in 1954 were from 300 predecessor engines. We always seemed to be racing with engines that were ahead of production by a year or so.")

Production of 1955 Chrysler \$00s in the Jefferson Avenue Plant was done on the slow-moving Imperial line. Modifications to New Yorker sheet metal, to accept the Imperial grill, were done to the "body in white" before painting or metal finishing. A problem child proved to be the dual-four-barrel intake manifold. Only two-thirds of its machining could be handled by production equipment, with finish machining done upstairs in the Jefferson plant tool room.

As 300s came off the Imperial line, Chief Inspector Harry Gough had his crew take every single car on a test run which combined high speed, city and dirt road traveling. Inspectors worked on a three-shift basis to test and prepare the coupes for delivery. It took about three hours before "write-ups" were worked off and the car brought to specifications. The same group tested all 300s, with each man responsible for two or three cars a day.

Though Chrysler people did not consider the 300 a "sports car", many were sure their lusty baby was an out-and-out bomb. Corporation statements of 1955 label the 300 "A sports



In late 1954, wire-wheeled pilot production editions of Chrysler's 300 were being bolted together at the body drop point on the Imperial line.

touring car, designed to bring Chrysler the benefits of a high performance reputation." Whether this was worthwhile or not, only time can tell. Industry observers believe that if the 300 were charged with all its engineering and promotional expenses, it would probably cost twice what it does.

No sooner had 300s been publicly announced than Carl Kiekhaefer set up his "Mercury Outboard Team" of "stock" cars, to promote sale of Mercury Outboards. Mr. Kiekhaefer was so enthused with 300s that he established a complete racing engine research center in his stock car garage. But when 300s began to race he discovered faults the proving ground failed to find. First were universal joint failures. When brought to the attention of the factory at two o'clock one afternoon, by three the next day a revision had been completed and heavy-duty universals were scheduled for future Chrysler 300s.

As one Chrysler engineer says, "It was standard procedure for Kiekhaefer to call in the middle of the night and needle us to establish better performance for his cars." Late-1955-series cars had engines fitted with double valve springs to eliminate bounce found in early stock cars raced by Kiekhaefer. He spent a lot of time working with a variety of carburetor velocity valves and vacuum controls to change air-fuel mixtures while testing on an engine dynamometer. One of Kiekhaefer's C-300s won NASCAR's 1955 Grand National at an average speed of 92.05 mph for 160 miles.

Early 300s stirred a smattering of orders from customers who wanted C-300 style and interior with a less rugged standard engine. Others wanted 300-horsepower engines in production Chryslers. A Nevada gambling club ordered a Chrysler-300-Imperial station wagon. The hybrid was a Chrysler station wagon mated to Imperial front sheet metal, with C-300 power plant, brakes and suspension. Only one was built

As early 300s in black, white, or red began to flow off production lines, problems began. The C-300 was so different from anything most mechanics had seen that they were unable to handle performance tuning. Owners began to write the factory for help. There was no instruction manual for the car, so Bob Rodger's group hurriedly mimeographed a sheet of specifications to help embattled owners get their equipment tuned. This first sheet began a tradition unique in the automobile industry because it invited 300 owners to write Chrysler about their experience with the new car. Only then did Chrysler discover a few people were unhappy with the 300. They had bought the best (most expensive) Chrysler

on the market—only to discover it was a rough-riding road runner, wholly unlike the quiet feather-bed transportation they expected.

Release of 1956 models began the use of sub-letter series identification. The second Chrysler 300 was the 300B, with a 1955 engine bored to 354 cubic inches and offering either 340 or 355 horsepower, depending on whether 9.0 or 10.0 compression ratio was selected. Special connecting rods and main bearings were standard as was a forged and hardened crankshaft. Solid lifters and the 1955 camsaft were continued. A modified three-speed automatic transmission was new, as was an optional manual transmission with eleven-inch clutch. Twelve axle ratios were offered, ranging from 3.07 to 6.17 to one. These were aimed at helping Kiekhaefer's stock car racing efforts, which required a range of "stock" gears to maintain the NASCAR winning streak established by the original C-300 series. A 300B won the 160-mile Grand National by averaging 90.83 mph.

On the beach at Daytona in 1956, Kiekhaefer had a 300B specially prepared for a flying mile run over the sand. First Tim Flock used it to average 139.373. Then he drove back to the starting line and gave the car to Detroit's racing grandmother, Vicki Wood. Vicki recently told CAR AND DRIVER, "I was sitting in the car when Mr. Kiekhaefer came over. He said, 'This is what I call the "Beast." It'll really



The 300B for 1956 kept the 1955 front-end design but boasted Exner's new upswept rear fenders. Under the hood it was even hotter than the C-300.

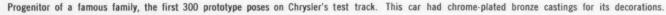
fly. But don't kill yourself, just drive all you can handle.'" Vicki's time, in the 300B, was a two-way average of 136.081 miles per hour, a women's speed record on the sand.

Stylewise, 300Bs used the same formula as the preceding model: Chrysler body with Imperial grille to provide distinction at lowest cost. They had the new '56 rear quarter panel of all Chrysler cars, plus addition of a "B" to the front and side medallions. Headlight rims were no longer chrome. Production of the 300 dropped in '56 to 1,050 units.

(Concluded next month)



Interiors of the first 300s were unusually plush for the mid-Fifties. This is the 300B, with buff-colored pleated natural leather upholstery.







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DUTCH TREAT FOR TRIPS

Continued from Page 29

acceleration. However it wasn't long before the young American repassed the Australian. Graham Hill was driving very hard, cornering his B.R.M. on the limit in a futile effort to keep in sight of the leaders. The result was that he overdid it coming out of the semi-circular bend after the pit straight and spun off the road. He restarted, losing two places. Both Brooks and Surtees worked past Gurney, who by the 30th lap was tenth with the fastest of the Porsches. He was driving steadily, however, in his casual-looking manner, wearing no gloves and lapping regularly without straining either himself or his machine.

Tavoni's "Faster" signal was heeded, but instead of the leading Ferraris pulling away, the young Scot clung to their heels. The race average climbed and a duel ensued between Phil Hill and Jim Clark for second spot, lasting until there were only about 15 laps left. Both were driving for all they were worth, passing and repassing in a spectacular way. This pleased the excitable crowd which numbered in the thousands, having come from all over Holland to watch an afternoon of G.P. racing in beautiful sunshine, relatively undisturbed by the North Sea wind which was weaker on race day than it had been in practice.

It was said at Monaco that Ginther's duel with Moss constituted his leap to stardom, but Jim Clark may well prove to be the revelation of the year.

At Zandvoort as at Monaco, Moss and Ginther were again fighting it out, Moss in front by four seconds. Unlike Monaco, there were now three cars in front of them. Moss was unable to close in on Clark's flying green Lotus with the yellow wheels as it sat on the tail of Phil Hill's Ferrari or pulled alongside, or slightly in front. Passing and repassing took place as often as five times in one lap.

Von Trips, a few seconds ahead of this terrific battle for second place, was completely unruffled. Driving at what seemed his natural speed, there was no skidding, no tail-wagging, no violent cornering, yet the race average was rising all the time. Phil Hill was driving harder than his team-mate and Ginther, to overtake Moss, indulged in powersliding on almost every bend, pointing the car slightly sideways as he accelerated away. By the 45th lap he was in fourth position. Moss was unwilling to accept defeat and behind them the order was Brabham, Graham Hill, Surtees, Brooks, Gurney, McLaren, Bonnier, Taylor, de Beaufort and Herrmann. Only nine cars were still on the same lap and the tail-end Porsches of Beaufort and Herrmann had been lapped twice.

With about 20 laps to go, it became obvious to the Ferrari pit that a 1-2-3victory was out of the question and about the same time Phil Hill launched his final attack, pulling out all stops and indeed

succeeding in pulling away from the Lotus. Clark simultaneously seemed to fall back, possibly deciding that a safe third was better than blowing up in a last attempt to gain second. The gap between the cars rose to five seconds, then to seven and with 16 laps to go, the Ferrari positions were frozen, a mechanic bringing out a signaling Hill had board listing "Trips, Hill." actually been catching up and was within three seconds of the leader, whose average was still rising fractionally.

With six laps to go, the order was still von Trips, Hill, Clark, Ginther, Moss and Brabham. The last-minute excitement was provided by Moss who kept harassing Ginther, running to within inches of his car when entering a curve or approaching to within inches in a slide through a corner, continually putting the dark blue nose of the Lotus on line with the seat of the Ferrari, first on the left, then on the right, as Ginther swerved to get the correct

line for the next corner.

At the beginning of the last lap, Moss forced his way through on the inside of Tarzan corner and built up a small lead on the curved south side of the circuit, but when they reached the straight leading to the pit area - and the finish line - the greater power of the Ferrari made itself known and there was less than half a car length between them as they crossed the line. The official results listed Moss with a 0.1 second lead on Ginther. There was 0.9 second between the leading Ferraris, and all of the first eight cars to cross the finish line did so within two and one-half minutes. This was close racing indeed!

The winner's average was 96.05 mph, only 4.9, seconds slower than last year's winner, Jack Brabham, with a 2.5-liter Cooper. Jim Clark's fastest lap, 1:35.5 (98.16 mph) compares favorably with the lap record of 99.7 set last year by Moss in

a 2.5-liter Lotus.

It was interesting to see that the main British opposition at Zandvoort was offered by Lotus. Brabham, World Champion in both 1959 and 1960 on a Cooper, could do no better than sixth in this year's Dutch G.P. After two years of supremacy it seems the Coopers have neglected the necessity of further development (perhaps in favor of their highly creditable Indianapolis project) with the result that the cars are now relegated to the rank of "also-rans."

How long is it since Ferrari won a Grande Epreuve? Well, not counting last year's Italian event which the British decided not to support and which was won by Phil Hill, the last Ferrari victory in the Championship series was secured by Tony Brooks at Avus in 1959.

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It's longer still since a German driver won a Grand Prix. It's the first time that von Trips has won an event of this importance, a feat which has not been accomplished by any other German driver in the post-war period. The last time, in fact, was at Rheims in 1939 when Hermann Lang won the G.P. of the A.C.F. in a threeliter supercharged Type W163 Mercedes-Benz, i.e., a German combination of car and driver. With Hans Herrmann bringing his Porsche home at the tail of the field at Zandvoort, three laps behind the winner, it seems that the time when a similar result can again be announced is still a long way off. -IPN



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GINTHER'S GOAL: GO FAST!

Continued from Page 47

where his father worked, that lodged Ginther in Santa Monica, there to learn about cars and to meet Phil Hill. He was born in Hollywood on August 5, 1930 and shortly thereafter his family (including sister and older brother) moved to Dayton, Ohio. In 1935 the Ginthers headed back west to Santa Monica. When Richie got to Santa Monica High School he majored in shops -"I've always been interested in working with my hands" - but schoolwork bored him and his grades were mediocre. There is very little mid-range in his interests; if he cares at all he's deeply involved and such was the case with his first car. "I worked one whole summer without movies or milkshakes to buy that car. It was a '32 Chevy. I think it cost \$100. It meant everything to me.'

Nothing exotic was done to the Chevy-"dual pipes, that's about all." Then came more work, more saving and a '33 Ford coupe. Its modifications testify that Ginther's solid mechanical approach was functioning even at that early stage. Much of the flamboyant machinery in the area was adorned with shiny parts picked at random from speed catalogs, with some of the parts working at cross purposes. Ginther's car was, he says, "Extensively modified but in a conservative manner. It had cast iron heads, not aluminum, and a modest cam. It was kind of old-fashioned but everything

worked together as a unit.'

One night in 1946 Richie's brother had a fraternity party at the house and among the worthy members present was a classmate of his brother, who lived four blocks away around the corner. Ginther met Phil Hill, talked a bit and went on his way. To Ginther at that point his car was a prized personal possession and not much more. About a year later he wandered over to the Hill garage, helped a bit on Phil's MG . . . and fell under the spell of Hill's burning interest in motor sport. "He was so enthusiastic!" says Ginther, punching out a memory still vivid. "He's the first one who ever started telling me how to drive a car, you know what I mean, how to drive a car fast. We got plenty of tickets. What I'm doing now . . . It's all his fault. But you know, his interest in old cars didn't rub off . . . yet."

Ginther graduated from high school in February, 1948 and went to work for Douglas in tool and die. He struggled on for 18 months, increasingly exasperated by the time clock. "Phil was a mechanic at International Motors," Ginther says, "and I was going to [sports car] club meetings with him. He had a long delivery to make and I took a leave and went with him. We drove a Rolls to Palm Beach, picked up an older Rolls and drove 'em both to New York. Then we flew to Houston, picked up a Simca 8 Sport and drove to L.A. Phil knew I was getting tired of Douglas and we talked a lot on the trip. When we got back he got me a job as a mechanic at International Motors. That was in July of '50."

Ginther worked at International Motors, drifted through a few other jobs and

landed with Bill Cramer. Ginther's first race, on the Sandberg Hill Climb Ridge Route, was in Cramer's MG-TC with a Clay Smith V8-60 engine. That spring he was given a choice of driving the MG at Pebble Beach or going with Cramer to Indianapolis to watch the "500." Ginther went to Pebble Beach, finished second to Hill's 2.9 Alfa in a heat race and sheared the cam gear drive in the main event. Then, in a maddening habit it had developed, the U.S. Army tapped Ginther on his birthday. On August 5 some years before his physical notice had arrived; this time it was the induction notice and two years later it was his discharge. The two years were spent fixing helicopters. It was also during this time that Ginther's father died of a heart attack.

Fresh out of the Army Ginther was invited by Hill to co-drive in the Carrera Panamericana, five days of high-speed roadscraping from Mexico's Guatemala border to Texas. Crowd and course control were of the usual Latin variety. One driver crested the brow of a hill, sailed off an embankment and landed among the carcasses of several other cars to the obvious delight of the spectators. A local wit, finding the action too slow, had removed the sign warning of a hard right. Ginther and Hill, aboard a 4.1 Ferrari Mexico coupe, lasted a day and a half. Gunning from Puebla to Mexico City they entered a turn too fast, spun off backwards and into a ravine variously remembered as being 20 to 70 feet deep. The depth was considerable but the car landed right side up and neither was hurt. Next year, 1954, they climbed into an open Mille Miglia-type Ferrari, bored out to 4.5 liters, and went well from the start, finishing second by 20 seconds to Umberto Maglioli after breaking the final-day record by averaging 140 over the choking, dusty stretch to Ciudad Juarez. Remembering the previous year's crash, Ginther had made frantic "piano, piano" signs from Puebla to Mexico City and to this day he isn't sure whether he should be credited with avoiding a crash or blamed for missing the victory.

Why did he take one, let alone two, such risky rides with a man he hadn't seen drive for two years? "I'd been up and down all those canyons [behind Los Angeles] with Phil," he says, "and I had more confidence in him than I had in myself as a driver. I had a vast admiration for Phil." As to being known for so long as "The guy who rode with Phil Hill in the Mexican Road Races," Ginther says it got very tiring and "I'm glad I finally earned a name of my

own.

After the Army Ginther worked for several sports car establishments, moving up from mechanic to service manager, and at one place got to drive the house Healey in several regional events, thereby gaining his first real driving experience. He had a short, sad trip to Europe in 1955 as mechanic for a Ferrari owned by Allen Guiberson which Hill was to drive in races following Le Mans. After Pierre Levegh's crash and the carnage that followed, Guiberson called his team home. That fall Ginther again wandered over to help Hill and, again, lightning struck. Hill, driving for John von Neumann, was helping prepare two Ferrari Monzas and a Porsche 550

(Continued on page 72)

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YOU TOO CAN OWN A SPORTS CAR

Continued from Page 31

He spat near the left front wheel. The engine coughed and died.

I drove out in a cloud of smoke after thanking him. Sports cars - phooey!

Things couldn't be worse, so they got better. I sent off for a workshop manual. It came and I studied it nightly, still cleaning plugs and pouring oil into the crankcase. I ordered a new top. I went out searching, and found a place where they would let me work on the car, use their tools and give me a little advice, all for a nominal charge. The instructions in the manual seemed to be detailed, profusely illustrated and easy to follow. I decided to take the plunge.

Meal schedules were rearranged and I headed for the shop, rattling and smoking, with the family waving goodbye as if I were going to sea. My wife was requested to pick me up at ten. I started taking things apart. The manual was propped up where I could see it.

The manifolds came off easy; so did the inspection cover on the left side of the engine. The "sump", (I had the workshop manual now!) was more difficult, even with the proper wrenches. Some of the bolts were in areas where an open-end wrench and a sixth of a turn per grab were necessary. The sump drain plug was frozen and burred almost round, so that I had to drop the pan full of dirty black oil. Most of it spilled when the sump came loose. On

Eventually, the head yielded too. One of the advantages of working on a "smoker" like this one was that none of the nuts and bolts were rusted or stuck. Everything was coated with a film of dirty oil. As I undid the "big-end bolts" on the first piston, I began to think thoughts of "This is a cinch." I slid the piston up gently, anxious to see what shape it was in. Something caught and it wouldn't slip out. I scrambled out from under the car and grabbed the manual. I had been proceeding so smoothly, I had neglected my reading. "Pistons may be withdrawn past the left side of the crankshaft" the book said, and so they could, with infinite patience and much painstaking rotation of the flywheel with my thumb. After an hour, all four pistons were out.

Three of them had rings that were paper thin and in dozens of pieces, the other had no rings at all. The latter had ring grooves that varied from an eighth to an inch in width. As the rings had departed, they had engraved their epitaph on the cylinder walls, the piston, valves and head. All of the valves had small cones of burned oil and carbon piled on the flat ends. The valve seats looked like irregular holes carved in a lump of coal. I began cleaning and scraping. Meanwhile a local machine shop promised that a man would come and measure the cylinders for taper and the bearings for wear. Those grooves in the cylinder wall were not encouraging.

The next night, back at the shop, the

news was stuck on my windshield. It was both good and bad. The cylinders had some taper and were badly scored. A rebore was recommended. The crankshaft throws and the mains were okay. The rebore could be done as soon as I had the new pistons in hand.

I hummed as I went to work installing the new top. The pistons cost me about eight dollars apiece, complete with rings, and the rebore was twelve. We scheduled the machinist for Saturday morning and he advised me to take all the studs out of the block, so he wouldn't have to do it.

Whoever had maintained this one was no mechanic. The front engine mount nuts lacked a half inch of being drawn up on their bolts. The odd pieces I had found in the tool box proved to be the transverse brace that connects the two sides of the bonnet, and the engine control link. With the loose mounts and the link missing, the engine was virtually free to rotate opposite to the drive shaft! I re-installed them. The starter bolts were less than fingertight, the tachometer gear drive was void of oil.

When I unbolted the rocker assembly, the front pedestal fell apart. It had been held together only by the bolt that kept it on. None of the locking tabs had anything left to bend up to serve as a lock. I ordered some more new parts.

On Saturday, the rebore was accomplished in about two hours, with an impressive looking machine which the machinist brought to the shop in a panel truck. He left me with a warning, "Get every speck of that grinding compound out of there before you do anything else!" I wiped and scrubbed for two hours more. My pistons came with rings installed and hooking them to the connecting rods was a simple matter of following the manual and merely "tightening the pinch-bolts onto the gudgeons".

Trying to work the first piston past the crankshaft (on the left side), "They are re-inserted in the same manner", was all the book said about this operation, and into the new cylinder bore proved to be not difficult. It was impossible!

I lay on my back for an hour trying to get the first one, complete with rings, crammed into the bore. Finally I crawled out, completely discouraged, and lighted a cigarette. One of my advisors suggested that I take the rings off, push the piston into the bore and far enough up that I could put the rings back on and work the piston down in the normal manner. I took the ring-expander with his cheerful admonition, "You probably won't break more than half the rings!"

A little gentle cussing seemed to help. With all my finger-nails straining, I was cramming rings into their grooves with eight fingers, pressing upwards with my thumbs. Suddenly, it slid into place!

I commenced assembling big-ends, this time with the "Split end pins", cotter pins, I used to call them, that had been omitted in the previous assembly. Things went together nicely until I tried to re-install the sump. If the cork rear bearing seal stayed in place, then the sump gasket fell off. On the fifth try, everything was right. The bolts went in in about twice the time it took to get them out.

I refaced the valves and lapped them to

their seats. I reassembled the head, this time using the little grommets which were neglected by the previous "mechanic". The new pedestal was a cinch to install and the head slipped over the shiny new gasket with no trouble. The manual said, "Use no jointing compound for the gasket, but it may with advantage be smeared with grease." I did it that way, then carefully torqued the head nuts in the proper sequence.

I had cleaned and polished the carburetors, and with the manifold, they went on next. All the new gaskets fit into place and I tightened up the fuel lines. I carefully set the tappets, a thousandth wide because the engine was cold. I secured and checked until I was certain that everything was right, then poured in the anti-freeze I had carefully stored in a bucket. It failed to quite fill the radiator, so I went for more water. When I came back, the last of the anti-freeze was splashing to the floor, since I had forgotten to close the radiator drains!

When I turned on the ignition switch, the fuel pump clicked merrily and I climbed out and peered closely at all the fuel fittings. Suddenly, one of the carburetor drain tubes began spouting fuel like an open faucet. Having had the whole mechanism in pieces the night before, I guessed instantly what was wrong. Two taps on the fuel chamber with a small hammer let the float come unstuck and shut off the faucet.

Heart in mouth, I tugged the starter knob. Loud gnashing noises wouldn't really have surprised me; after all, I'm not a mechanic. The engine swung twice and instead started with a smooth rustle completely unlike the clatter it had generated before. Oil pressure was good, it even idled where it was supposed to, at a thousand turns. I stuck my nose under the engine looking for oil leaks . . . none. The engine seemed to appreciate my careful, amateur work. The patient was coming out from under. Engine warmed up well, I shut down and re-set the tappets. Now, feeling like an expert, the job went fast and I noted with pride how hard it was to turn the crank, now that the pistons fit snug in the bore and the valves actually closed off their holes instead of partially obstructing them.

All of this is true and I still have the scars on my knuckles, a burned place on the back of my right hand and a little grease under my fingernails to prove it. Now I enjoy a sports car that hums its way through the gears, doesn't smoke or drip oil on the driveway and a certain status among the friends who used to scoff at my noisy, fuming purchase. The budget was hardly strained. The car was inexpensive and the overhaul job cost something under a hundred dollars, including pistons, rebore and the new top. I sewed up the upholstery with a bent needle and now I'm working on a deal to get a new paint job.

So I've got my little car and I find infinitely more fascinating the cutaways and engine sections of the Maseratis and Bugattis, now that I know what my own engine looks like. I recommend this route for any of you who want a car, but haven't the four thousand (or best offer) to spare. You can do it on a budget, and it's not too hard. Try it . . . and Good Luck! -AV

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COUP DE CAMORADI

Continued from

Page 25

had upset all calculations, and the change had to be done after ten laps instead of after about 15. The change was carried out with precision and in just over 30 seconds. Von Trips took the wheel and drove away, still in the lead by 44 seconds.

The Ecurie Ecosse Cooper was halted in its progress by a broken front shock absorber mounting and was wheeled off the track after a brief examination.

When Richie Ginther stopped to refuel, change tires and hand the Ferrari over to Gendebien, Moss went by into second position, but then a lap later, the Porsche too was due for a pit stop. Before Graham Hill took over, the car had been passed by Masten Gregory, Ricardo Rodriguez and Olivier Gendebien. A period of intense activity in all the pits followed, and after 15 laps, the order was von Trips, Gendebien, Gregory, Graham Hill, Rodriguez. Jim Clark was in eighth position, driving the Aston Martin very steadily, lapping at about 9:48. After 16 laps, a very fast refueling stop was made, no tires changed, and the car handed over to Bruce McLaren.

The pace immediately began to fall as it started to rain, softly at first, but very soon it was coming down hard. Braking distances went up and the smaller, lighter Porsche RSKs were on the whole favored by this weather in their uneven battle against the powerful Ferraris. This was of course realized by Tavoni as well as by von Hanstein, and it came as no surprise when Hill brought in the Porsche for Moss to take over. On the dry track, he had lapped in 9:42.6, fastest ever for a two-liter car, and in the wet he was gaining about 15 seconds per lap on Gendebien's Ferrari. On the 19th lap, Gurney brought the other remaining RSK in for a complete tire change, which owing to the five-stud disc wheels, is a more complicated and longer operation than on the Italian cars, Gurney himself tanked up and cleaned the windshield before Bonnier took the car away again.

On the 20th lap, Gendebien spun the Ferrari and was overtaken by Moss, now 4:37 behind the leader at almost half distance. So long as the track remained wet, there was no doubt that Moss's Porsche was the fastest car at the Nürburgring. After his spin, Gendebien came in to hand the car over to Ginther, and all tires were changed again. Von Trips also brought the leading car in for another tire change, and Phil Hill took over. This cost valuable time, for Moss was now only 1:34 behind.

As the rain continued, both the rearengined Ferraris began to sound rough, and it turned out that the air intakes intended to cool the rear brakes were taking in so much water that it upset carburetion. Ginther came in for some improvised panel beating to reduce the openings, but Hill kept on without bodywork modifications, driving very hard to keep the lead.

Suddenly, things happened very quickly. The engine seized for Moss and the car went off the road near the Flugplatz, putting the Camoradi Maserati, Casner driving, in second position, 5:30 behind the leading Ferrari, Rodriguez was third and McLaren fourth. But the drama was not over yet, for while the Rodriguez Ferrari was being refueled, Phil Hill went off the road with the leading car, the driver escaping practically unhurt, while on the spot firemen extinguished a fire. One further retirement reduced the Maserati entry, as Maglioli came in with transmission trouble, which sidelined the car.

By now, the winner was definitely in the lead, and only the Rodriguez Ferrari was on the same lap as the Camoradi Maserati. Casner brought the car in after 27 laps for fuel and water, and Gregory took the wheel, going off as it stopped raining and the track dried up. Simultaneously, the Scarfiotti/Vaccarella Type 63 Maserati, now in third place, was brought in for Trintignant to drive, and Tavoni decided to place von Trips in the remaining rear-engined Ferrari, now in ninth position.

The Aston Martin entry retired after 25 laps with a broken oil pipe, ending a drive which had brought the car up to fourth place in the wet, a considerable feat with



a 260 bhp car weighing over 1750 pounds. It's interesting to speculate how a team of three Aston Martins would have been placed in this race, when a well-driven private entry came so near a creditable result.

As the sun broke through the clouds a few minutes past 2 p.m. the Rodriguez Ferrari came to the pits for attention to the throttle linkage. By the time it was back in the race, the gap between the leader and runner-up was over seven minutes.

The Linge/Greger Porsche Carrera was second to the Graham/Martyn Lotus in its class, and with Stirling Moss idle in the pits, it was a logical decision to hand the car over to Moss and Graham Hill for a final effort.

As von Trips was working his way through the field as hard as he could, with no hope of victory, still in ninth place, the battle for first place subsided. The heavy V12 Ferrari capably driven by Pedro and Ricardo Rodriguez could not catch the flying white and blue Birdcage Maserati

In the two-liter class, Moss was soon in front of the Lotus, but as though the duel had not been adequately decided at that, the Lotus blew up at the Hohe Acht at 37 laps. All Porsche interest now centered on the disc-braked Carrera, for the remaining RSK of Gurney and Bonnier was three laps behind. The dark red coupe came in for fuel and Graham Hill drove a few laps, but handed back to Moss for the final four laps.

Von Trips, driving beautifully, with a car

now in perfect order again in dry weather, caught the Rodriguez car, but was of course, one lap behind, and in sixth position overall.

The Camoradi pit was not quite sure about fuel consumption, so with three laps to go, Gregory was called in to take on a few gallons to be on the safe side. To continue with retirements, the remaining Type 63 Maserati stopped near the finish line with a dead engine. As the Scuderia

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Serenissima under Ugolini management was even more in the dark about fuel consumption than Camoradi, it was tempting to deduce that the tanks were empty, but in fact, it was more serious than that. Guerrino Bertocchi ran up to talk to Trintignant, but in the end the car was just left there. This retirement put von Trips in fifth place, and the Rodriguez car seemed a certain runner-up, when a front wheel collapsed at Schwalbenschwanz. Pedro Rodriguez was not to be stopped, how-

ever, and actually drove the car to the Ferrari pit, with spokes wound round the hub, brake disc and all. A new wheel was put on, and amid loud acclamations from the crowd the young Mexican was on his way again, without losing his second position. As the Gurney/Bonnier Porsche began its last lap, it was smoking badly and reported to be losing oil. It did, however, last to the end and finished tenth.

What a beautiful sight the checkered flag must have been for Masten Gregory, after beating not only the newest type of car of the same make, but the entire SEFAC Ferrari team and the official Porsche factory team as well. It must also have been particularly heart-warming for him, 100 yards after the finish line, to receive the last of the pit signals. The board simply said "BRAVO" in capital letters.

The race must be considered valuable experience for Ferrari, for climatic conditions at Le Mans are not among the most clement in Europe. As far as mechanical reliability is concerned, however, the quality of the 2417 cc Dino engine was proved again.

After the fourth and fifth places secured by Type 63 Maseratis in the recent Targa Florio, their performance at the Ring was disappointing. They were never among the fastest, and in the rain, the front-engined Type 61 was noticeably faster on the corners. Perhaps it's time for the Officine Maserati to take up racing again instead of merely supporting such stables as Camoradi and the Scuderia Serenissima. Remember what strides were made when Maserati raced officially during 1953-1957? —JPN





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THE ART CENTER SCHOOL

(Continued from page 66)

for races at Santa Barbara, "I helped out for a couple of days," Ginther says, "and then one day Mr. von Neumann said, 'Since you're helping out I'll have one of my mechanics prepare the other 550 and you can drive it.' I didn't know he had another 550. I was astounded . . . I was delighted . . . dumbfounded. I'm not very good at expressing myself in situations like that and I don't think Mr. von Neumann knew how much it meant to me.

Shortly thereafter Ginther was signed as a regular driver and in mid-1956 went to work for von Neumann's varied automotive holdings, which at the time included both Volkswagen and Ferrari. Ginther first worked on new Volkswagen preparation, then managed it, then handled Ferraris and ultimately was made manager of Ferrari of California. For the next four seasons he drove an assortment of fair to very good cars in races on the West Coast and at Sebring, building a name for himself as a driver who respected machinery and could win when he felt no abuse was involved, and as a person with no time for niceties and a candor with a cutting edge.

It's reasonable to believe, as some do, that during these four hyperthyroid years Ginther was tugging at the sleeve of Enzo Ferrari, hoping for a factory contract. Ginther concedes the plausibility of the tale but says flatly that it's wrong. He went to the factory several times on business and even tested a few racing sports cars but, he says, "I was told I was more important to Ferrari as a representative than as a driver." Not long before he became a factory driver he said of racing in Europe, "Sure, it would be great - Formula 1 is the greatest - but you have to decide whether you're going to be in business or be a race driver. I'm in business." Not long after signing as a race driver he said earnestly that it was merely the first job that came along, adding, "I've always wanted to go over if I was capable of it. But to go over as an also-ran, just hanging around looking for rides, wasn't my idea."

What prompted the switch, Ginther says, was the realization that he was miserable in his job and that it was affecting his whole outlook. "I was nervous," he says. "I felt I wasn't doing the job right. I was running the whole business - selling, service, bookkeeping, handling complaints, ordering from the factory. And if you make a mistake on ordering you have \$12,000 worth of car staring you in the face. I had no experience in all that. I was just unhappy. It was too much for me. I was at my wits' end. It was just over my head. It was affecting my married life. In January [1960] I went to Argentina to drive with von Trips [they were second]. I stayed a month and relaxed and I realized how unhappy I was. So I went back and quit. I didn't care what I did. I would have worked in a gas station."

Luigi Chinetti nosed out the gas station recruiters with the offer of a Ferrari for Sebring; Ginther had driven a factory G.T. there the year before and finished first in class. This time the car blew up with Chuck Daigh aboard and Ginther went back to California, there to get a call on the electric telephone from the Ferrari works. The contract he was offered was of customarily modest Ferrari size and guaranteed only four races: Targa Florio, Monaco, Nürburgring and Le Mans. As it developed, Ginther drove those races plus Holland, Brands Hatch, Monza and the Modena Formula 2 race. And he tested with a passion and a skill that advanced by months and perhaps years the development status of the new rear-engine cars. Ginther's ability and the potential of the cars can be measured roughly, but to this successful combination must be added an immeasurably fortunate juncture of people, time and place.

Ginther and chief engineer Chiti, it turned out, are sympatico. Ginther, insecure as manager of Ferrari of California, quickly understood the cross which Chiti had to bear. Chiti, heaven forbid, is a Tuscan. It is difficult for non-Italians to comprehend but the unification of Italy, ostensibly accomplished 100 years ago, is far from complete. Regions, cities and even villages consider Italy a vague and unimportant legal fiction with the real world ending abruptly at their own provincial boundaries. The small duchy of Modena was just north of the large and prosperous duchy of Tuscany with its capital at Florence. "Rather dead in bed," the Modenese still say, "than a Tuscan knocking at your door." Italians on their best behavior aren't wont to rush about following orders so it's obvious that Tuscan Chiti would have trouble with his Modenese help. Ginther arrived just as Chiti's brilliant new designs were beginning to win him grudging respect. Ginther's great enthusiasm for the cars, his respect and liking for Chiti and his readily apparent value as a co-worker helped ease the mechanics out of bed and toward that Tuscan at the door.

Ginther knew a great deal about engines before he signed with Ferrari but comparatively little about chassis refinements. Now he believes it is the most important facet of car construction and has plunged wholeheartedly into learning the art. "We've always had the horsepower," he says of Ferrari, "but we've never been able to use it. Now let's try to use it better than anybody else. I don't mean a suspension as good as Cooper or as good as Lotus. I mean better." Ginther's new confidence had led to some changes in approach. Asked if he enjoyed tinkering with the cars himself, he replied, "I try to be there [when the mechanics are working] but I'll just say the car understeers, not 'Give it less negative camber in the rear because it understeers.' That's stepping on their toes. You have to be a diplomat."

Ginther's value to Ferrari is now established but there was a bad moment at the beginning. In the 1960 Targa Florio, his first race under contract, he bored into a turn too fast and on the wrong line, hit some gravel and then a tree. It was one of the very few accidents he's had and although he wasn't hurt the effect was sobering. "That crash was one of the best things that could have happened to me," he says. "I realized that I had a hell of a lot to learn. It scared me, it really scared me. Not because I crashed but because I didn't know what caused it. If I hadn't crashed I might have gone through the season trying to look good, and got in some serious trouble." As it was the crash reinforced his belief ". . . in going slow and learning it rather than going

fast and thinking I know it and getting hurt. Whoever said the object of a race was to win at the slowest possible speed was really right,"

Ginther had another mishap last season which may cause a change in Ferrari's testing procedure. It has been the practice for test drivers to sort out minor problems on the back roads around Maranello, dodging hay carts, Fiats and bicycles while trying to approach racing speeds. On one such sortie in a Le Mans car Ginther had a brake pad weld to its disc. With the factory brass peering anxiously down the road in front of the factory, Ginther chugged up on the back of a Vespa. "I refuse to test on the road now," he said later, "It's just too damn dangerous."

Excepting the Targa Florio fiasco, Ginther greatly enjoyed his first European season. He found the competition stiff but says "I enjoy driving with people you can trust and who help you. They have found their place in motor racing; they're pretty secure types and they're not out to cut you off." Monza was the fastest circuit on which he raced and he says the speeds, much higher than on U.S. circuits, impressed me but it's only a challenge; it's part of racing." He liked Monaco best because "It's one of the few courses that brings racing into the society of everyday life rather than out in the farm land." (He believes the best circuit in the U.S., and one of the best in the world, is Laguna Seca.)

Ginther, who thinks first of finishing and then of winning, has developed a distaste for the longer sports car races - Le Mans, Nürburgring and Sebring. "When you drive you have to think about the machinery all the time," he says. "I hate those races because you can't drive to your capacity, you have to drive to the ma-chinery's capacity." And, to Ginther, the fact sports cars are beefier than Grand Prix cars is a strike against them. "A lot of bad drivers go out in sports cars," he says, "and mangle them. Sometimes they blow up and sometimes they don't and once in a while they win. You can't do that in a Grand Prix car."

Ginther endorses lightweight racing cars on the same principle which leads him to distrust sports cars: separation of the manglers from the mechanically-minded. 'With today's standards of car building you dice it up and the car breaks," he says. "You just can't bounce these cars off curbs. It makes for better driving. But I'm not endorsing a super-extra-light car; I like the [minimum] weight regulation. The British cars didn't come to Monza [in 1960] because they couldn't take the pounding. They knew there was a race at Monza when they built those cars. That's not right. One thing about Ferrari, you're driving pretty damn safely prepared

To Ginther the greatest single virtue in driving is smoothness. At Sebring this year he switched to a front-engine car and, angry that his rear-engine car was broken, .. started pushing. The pits showed me times from 3:27 to 3:17. As soon as I realized I was so erratic I quit trying so hard and eventually settled down to 3:18 to 3:20. You're always learning."

All drivers like to feel they're going fast and a favorite gambit among team man-

g

agers is to send out a driver in two cars, one with a quiet exhaust and one with a noisy one, and then ask which car was the fastest. Drivers invariably will reply that the noisy car was much, much faster, then look incredulously at lap times which were slower than with the quiet car. Ginther has fallen for this gag and its variations, which include a car with a short wheelbase which can be thrown about in glamorous fashion, but he has learned the lesson and taken the quiet, smooth car. Some drivers, and a few of them have made the Grand Prix circuit, don't learn and in fact they don't want to learn. More than go fast, they want to look like they go fast, sliding through turns on full opposite lock, and one feels they would be happiest wearing a white silk scarf that flapped in the wind. These drivers get Ginther's "dandruff" up. He snaps out the words as he says, "Racing is serious and not a social thing."

Living in Europe has opened up the Ginther horizons. During the first season Richie picked up enough Italian to get along while Jackie, a small, vivacious, darkhaired girl, got some grammar books and attacked the subject more methodically. They have sharpened their taste for wines and, Richie says, "After seeing how interested the Europeans are in their history it made me more interested in the history of California. Now when we're home we like to go out and look at the old missions and trails." Jackie has misgivings about racing but to date hasn't put her foot down. They met when she was a secretary at the California Sports Car Club and were married in 1958. "I was already a part of racing," Richie says, "and she accepted it. It would have been different if I had taken it up afterwards . . . it would have been impossible."

Ginther takes very well to team discipline; whether he would prefer to drive with more freedom he doesn't know. "I've never been in a position to say. But if you're on a team you might as well drive as a team," he says. "I dislike people who don't do their job." Ginther's great respect for racing cars, almost a fetish with Ferrari, would seem to guarantee him a place on the team for many years. The workings of Scuderia Ferrari, however, are never that simple. The cars are fast but the pay is low; apparently the Commendatore hasn't fully realized that the men who drive for him these days aren't all Counts. Phil Hill wanted very much to stick with Ferrari through his early, lean years and as a bachelor he could. Dan Gurney, with a wife and two children, decided it wasn't worth the strain. If Ginther ever feels he's being treated worse than he deserves, it's likely that he'll move on.

Ginther's future, with or without Ferrari, is difficult to assess. His European competitors say he's quite fast now and, because of his careful approach to new circuits, he'll probably get much faster. Some, however, question whether a driver short on "fire" and "dedication" can make it to the very top. These reservations are put forward somewhat hesitantly for the speakers are aware that another driver, a man vastly different in temperament from Ginther but with a similar approach to racing, a driver named Brabham, has indeed made it to the very top. -SMcN

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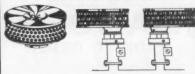
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BODY BUILDERS TO THE WORLD

Continued from Page 39

under three tons. The original Model JNSN truck has, at this writing, topped a million miles and is still going strong.

During World War II the brothers kept the Carter's Green plant going at peak output, producing airplane seats, bomb cases and barrage balloon fittings - until the place was blitzed and ravaged by fire, with the added loss of many valuable records and blueprints. Some months before D-Day, though, the plant was back at work, this time converting Sherman tanks to amphibian use.

During long stints of fire-watching at night, when they often had to duck enemy bombs, the Jensen brothers harnessed their active imaginations to a new project - a postwar model to be known as the "Straight-Eight." Once more the accent was on luxury and effortless high-speed cruising; once more this policy paid off. Its Meadows-built engine was a straight-eight, four-liter "square" unit with inclined valves and pushrods and an aluminum block and head. Its output of 130 bhp would theoretically cruise the car at 109 mph for a piston speed of 2500 fpm. The four-door sedan body had a front seat wide enough for three, but its high basic price of nearly \$5600 (without British purchase tax) again limited the market.

In 1954, however, though the public at large was unaware of the reason, the Jensen fortunes took a big upward turn. What actually happened was that the brothers were awarded a contract for the basic production of the new and highly successful Austin-Healey, destined to win the hearts of enthusiasts the world over. Today, six years and many thousands of cars later, Austin-Healeys are still being built at the Jensen plant, which maintains a steady output of 200 units a week.

At first the cars were assembled in the original Carter's Green plant, but soon the available 50,000 square feet of covered space proved inadequate for the growing tempo and volume of Austin-Healey production, besides other Jensen activities. By 1958 an additional 70,000 square feet were provided in a new factory known as Lyttleton Hall and located at Kelvin Way, a mile or two from the original factory. Since then, this space has again been enlarged by new buildings which now provide a floor capacity of 200,000 square feet, with a further 100,000 square feet of modern buildings on the way.

When I visited the Lyttleton Hall plant recently, dozens of Austin-Healey 3000s were in various stages of assembly, from bare shiny metal to elegant two-tone paint jobs. This was besides the fiberglass tops for these cars and for Sprites which are also being turned out by Jensen. The main stampings for Austin-Healey bodies are brought in from outside and mounted on jigs, ready for welding. Smaller stampings are produced on the spot. Once welded into a single unit which includes all outside body panels, the raw body and

chassis undergo the usual dipping and degreasing. Each unit also gets a Porterizing bath that provides efficient rustproofing, even inside the chassis channels. Instruments, upholstery and all fittings are put in, after which the units go to the MG factory at Abingdon-on-Thames, Berkshire (pronounced Barkshire) where the engine, transmission and axles are installed. To an outsider this carefully unpublicized facet of activities at the Jensen plant comes as a big surprise; but there are other surprises still in store.

For instance, when Sweden's Volvo decided to build substantial numbers of its handsome new P 1800 model in England, several British firms made bids, including plants much larger than that of Jensen Motors. It was the brothers, however, who got the contract, two and a half years ago. Once again, the job is principally one of assembly. Bodies are made by Pressed Steel of Scotland, then shipped by rail to Jensen for painting and trimming. Instruments, wiring, hardware, trim and leather all come from British suppliers, while the British firm of Girling provides the (front) disc brakes. The engine, transmission and axles, however, are sent over by Volvo.

The monocoque (unitized) construction of the latest Volvo - an attractive and well-proportioned sports-type sedan - lends itself readily to assembly and production at the Jensen plant, but a brand-new factory building is already nearing completion at the Kelvin Way site, partly for this purpose. With these added facilities, the Jensen brothers expected to be turning out 150 to 200 units a week by mid-1961. When Jensen general manager Ray Clark - a handsome, debonair, sun-tanned individual right out of the pages of a Leslie Charteris novel - showed us around the two plants, there was some active hush-hush testing of the new Volvo under way, though not yet any production line.

Since World War II the Jensen brothers, famous for hiding their light under a bushel, have been involved in several other activities related to automotive production. One was the Jen-Tug, a small tug for short-haul trailers carrying big loads. Using the Austin A55 engine as a power unit, the Jensens produced 1500 of these tugs for British Railways and various commercial firms. Then, two years ago, an agreement was reached to manufacture the German Tempo commercial vehicle under license.

"Among other types, quantities of the compact, 12-passenger Tempo bus were required in the Dominions," Mr. Clark explained. "The idea was to overcome import tariff problems by shipping out a British vehicle." Jensen engineers carefully duplicated all the components of the Tempo, with the exception of the ZF differential and the engine, for which they substituted the ubiquitous A55 power unit. Better than 150 of these one-ton, frontdrive vehicles have so far been produced, with 70 chassis already exported to New Zealand, where customers build their own bodies.

Meanwhile, back at Carter's Green, production of the now famous Jensen 5418 fiberglass coupe continues at a leisurely pace. Introduced eight years ago by the Jensen brothers, this was the first 100-mph closed car ever offered to the public with a fiberglass body. A dozen of these machines stood end to end in a bay, each in a different stage of completion; and certainly there was no undue haste about getting them out.

"In this respect," said Mr. Clark, "we're in a unique position in the industry, because every Jensen we produce is sold beforehand. Quite often the purchaser may request some small change to suit his particular needs, and if at all possible we try to meet his wishes. When an item is already sold, production can afford to be a little more flexible."

Present output of the Jensen is only three cars per week, but this will be stepped up to 10 units when the new factory is completed.

About a year ago in spite of their publicity shyness the Jensen brothers got the full glare of the spotlights. That was when a Jensen 541R won the London-Paris "by any means" race in two hours, 27 minutes, 17 seconds. The Jensen sped from London to Lydd Airport, was driven straight into a Silver Cities Airways flying boxcar which alighted at Le Bourget, then made a wild dash for the finishing point at the Arc de Triomphe to capture the honors.

I can personally vouch for the fact that the driver had an easy ride, because I drove one of the latest Jensens all the way from London to West Bromwich on my visit to the factory. Much of the run was along Britain's new M1 northbound superhighway, and the general driving impression gained was extremely favorable. The four-liter Austin Princess six-cylinder engine is no ball of fire, but it does not need to be. So much torque is available that with the smooth four-speed gearbox and overdrive (which deliver a whopping 30 mph per 1000 rpm) a cruising speed of 100 mph is absolutely effortless. Steering is light and accurate and the Jensen's all-'round disc brakes can toss you right through the windshield-if you'll let them! As for luxury, the pigskin upholstery, contour seats and elegant fiberglass bodywork are beyond criticism. It was this handsome two-door coupe, in fact, which won the 1959 silver medal for bodywork at London's Earl's Court Motor Show. Noise level is extremely low and the Jensen certainly gives you a feeling of arrogant ease, perpetually sustained by the envious glances of mere mortals in ordinary automobiles. The last time I recall feeling that way was when I was the proud owner of a 300SL gullwing coupe, six years ago.

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As for the Jensen brothers who started it all, they are as interesting and unusual as their remarkable products, for though their kinship is obvious, their personalities are in marked contrast. Both are tall, huskily-built men, alert and keen-eyed, but whereas Alan (the elder) is soft-spoken, retiring and affable, Richard has a more blunt, decisive and direct approach to life, booming out his views without mincing matters and regarding you the while from under bushy eyebrows. Yet no greater compliment could be paid these two men than a cross-section of opinion taken from among the 1200 employees at the Jensen plant, most of them staid Midlanders.

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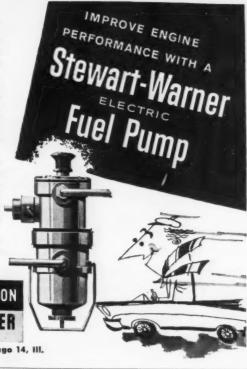
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RUDDSPEED ACE

Continued from Page 48

to Laycock overdrives operating on third and top gears. Final drive units are an ENV contribution. Dagenham Ford, Moss and ENV parts distribution being international, replacements in these departments aren't likely to pose any insuperable problems for U. S. buyers.

If on the face of it A.C. and Ford seem strange bedfellows, forget it. true-blooded sports car should be, the Ruddspeeder is a constant incitement to pleasureable violence. Figures speak more tellingly than prose, though, so let's look at it mathematically, using the hottest Bristolengined counterpart as a yardstick (comparisons, if odious, are unavoidable if we're to get our relative values right). With its 31/4-inch bore, 2533 cc capacity, 154 lb-ft torque and 150 bhp, the Zephyr has 56.4 percent more piston area than the 100D2 Bristol, 29.4 percent bigger displacement, 26.2 percent extra torque (generated 1500 rpm lower down the rev scale), a 20 percent power bonus. The contra-Zep weight penalty, on the other hand, is only around one hundred pounds total, if we compare a Laycock-equipped Ruddspeed with a nono.d. Ace-Bristol - legitimate because the test car had Laycock's stuff and so will all cars in series with it, whereas it's only an option on Bristol-powered A.C.s.

In this 150-bhp state of tune, the Zephyr engine is a schizophrenic. If you want to play rough you can indulge in a screaming surfeit of revs in every gear, taking the counter needle around to the redlined 6000 rpm mark before snatching the short backcranked shift lever from notch to notch. Treated this way - though officially you're not advised to exceed 5500 rpm for more than brief periods - Dagenham's buoyant six snarls with fierce relish, savoring its translation from the heavyish Zephyr into a 700-pounds-lighter sports car. On the other hand, the effect of the aluminum cylinder head and the improvement in charge distribution wrought by triplicated carburetion seems at last to counterbalance any loss of flexibility that a 1.2-point raise in compression might otherwise entail, so violence isn't mandatory, just invited. In lazy mood, anywhere but in urban traffic, you can practically forget the lower four gears in the Moss/Laycock repertoire, simply flicking the overdrive switch up and down between top and supertop and doing the rest with your throttle foot. Torque of a caliber never before buttoned into any production A.C. is the key to the car's split personality.

How fast, flat out? The evidence unfortunately isn't conclusive. On the only English itinerary that permits high speeds, we ran the speedometer out of figures and held it there (about five per hour past 130) for seven miles. We then desisted because we'd arrived where we were going, viz., our lunchstop. The engine hadn't missed a beat or otherwise registered distress; it switched off without even momentarily running on. We lifted the hood, looked at it, listened to it. It looked the same as it always had, smugly oil-free under its brightly chromed rockerbox lid, emitted none of the heatinduced creaks and crackles that even vaunted racebreds are sometimes known to emit under the same conditions.

For our timed standing starts, we restricted initial revs to the unusually moderate rate of 3000 rpm, taking our cue from Ken Rudd, who'd already demonstrated that this procedure was at least as effective as the screaming technique that's customary with less torqueful engines. None of these getaways was accompanied by any perceptible wheelspin, although initial acceleration, once the clutch was fully home, was truly fierce. Credit for the high standard of rotational bite should doubtless be shared among three factors: a) Michelin X tires; b) the Ace's wishbone and transverse leaf spring i.r.s., to which any form of hop, skip or jump is totally foreign under inertia-annihilating conditions; c) the relatively large share of its weight - more than half, unladen - that the A.C. carries on its back wheels.

To some extent undoing the good work of the inherently accelerative Ford engine is the slothfulness of the synchromesh, operating, to the best of its limited ability, on second, third and fourth ratios. Except by simply brute-forcing it and shutting your ears to the resultant graunch, you just can't make the first-second shift fast, though second-third and third-top are a mite quicker. When you aren't trying to beat the clock, on the other hand, changes are slick and easy, aided by a good lever position and its moderate throw, 51/2 inches in the first-second, third-top planes.

Best times from zero to anything up to a hundred were obtainable, experiment showed, without using overdrive. In practically any other context, however, the Laycock equipment was invaluable and in almost constant use. Positioning of the switch — operable by finger touch without unwrapping the hand from the delectable wood-rimmed wheel — was so good as to be almost too good: mundane motions like scratching an ear or opening a side window often operated it accidentally.

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Suspensionwise, the only difference between this Ruddspeed car and a normal Ace or Ace-Bristol is that the former's front main spring leaf is stronger to take care of the Ford engine's extra weight (this unit accounts for 30 of the model's additional hundred pounds). More than one writer, the present tester included, remarked in articles published during C/D's SCI incarnation upon the Ace's only handling peccadillo, a noticeable but controllable back-end chop or wiggle, manifested on the exits from fast turns of certain cambercurvature configurations. This phenomenon seems to have been abated in the Fordified version, but not entirely eradicated. The improvement appears to go up in proportion to the radius of the turn, multiplying at and above the point where a 2-liter engine of either of the relevant species would be running out of torque, whereas the Zephyr still has plenty left.

On X tires the cornering sidebite is nothing short of incredible, so much so that the only way of really learning where the limit lies is to slide across into the passenger seat and surrender the wheel for practical demonstrations at the hands of

(Continued on Page 80)





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an expert like Rudd. To see and to feel is to believe, but nothing else is. Rudd in his turn slid across and surrendered the wheel to us while we demonstrated an equanimitously sustained 110-112 mph (indicated) for mile after mile on wet roads, in heavy rain, on England's only motorway; sole detractor from comfort during this exercise was personal hydration resulting from water leaks past the top-screen joint and through sundry side window interstices. Shutting the climate out of an Ace under really wet conditions seems impossible.

The brakes (unassisted Girling discs in front, Al-Fin drums at the back) are more powerful than they seem at first acquaintance. Pedal pressures, while perhaps not high by sports-racing car standards, are certainly higher than most sports roadsters call for. On the other hand, the system is completely consistent in its behavior, has great positiveness and an agreeably short pedal travel. Of fade we never detected a trace.

The instrument constellation, comprising large-diameter paired speedometer and tachometer, fuel contents gauge (rather sparsely graduated in quarters of an unspecified total, which, we'll tell you, is approximately 16 U. S. gallons), clock, ammeter, oil pressure gauge and water thermometer, is businesslike, readable and well arranged. All dials, like the padded dash, are black, with clear white numerals. Control pedals are metal surfaced with small rubber inserts for sole grip; their lateral interpositioning is good, relative placing of brake and throttle making heeltoe action possible but not ideally easy.

The leather-upholstered seats are superb—well bucketed, resilient without being squashy and with backs of a curvature that's anatomically perfect. The only gripe here is that with the driver's seat on its sliders' rearmost setting and the telescopic steering column pushed forward as far as it'll go, there still isn't room for a longarmed operator to uncoil himself to the limit. Also, with the side windows rigged, the pivoting panels provided for ventilation and hand signaling aren't big enough to allow anyone but a pinhead to stick his head out to sight a reversing maneuver.

The detachable soft top, like the tonneau cover, is well tailored in very good quality plastic material. Together with the tubular framing it's stretched over, it comes right away (after undoing sixteen press-dot fasteners around its back edge and two strong clamps on the windshield frame) and stows in the trunk. The latter isn't too capacious and houses the spare wheel, from which luggage isn't insulated.

The Ruddspeeder's surprisingly low fuel consumption has the incidental advantage of lengthening the intervals at which you need to persuade gas through an absurdly small and restrictive filler neck.

The Ace isn't for smokers (no ashtrays) and the paint job, although above criticism as far as the wide open spaces are concerned, stands up less well to hole-and-corner inspection. A large lockable dash cupboard for personal trifles is an asset, and there are map pockets in the door linings as well.

The Ace-Zephyr's U. S. price is presently under negotiation and inquiries should be directed to K. N. Rudd (Engineers) Ltd.

—Dennis May

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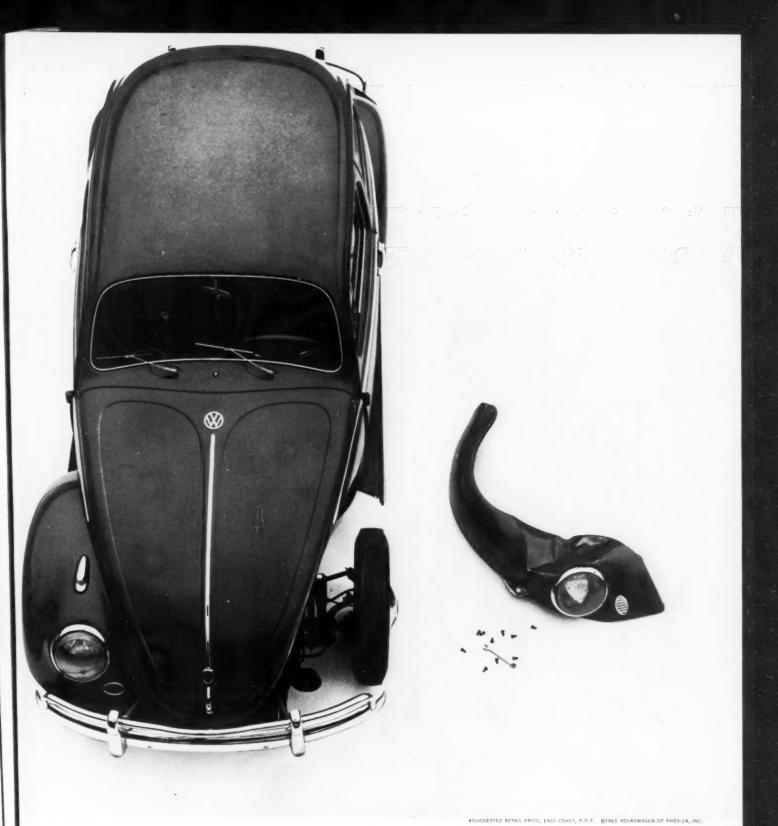
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